OFR 89-005

OPEN FILE REPORT ON SELECTED MINERAL OCCURRENCES OF THE COBEQUID AREA, NOVA SCOTIA

NTS 11E/05, 11E/06, 11E/10, 11E/11, 11E/12, 21H/08

By K. E. NORTHCOTE, G DEMONT AND A. ARMITAGE

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NOVA SCOTIA DEPARTMENT OF MINES AND ENERGY

by: K. E. Northcote, G. DeMont and A. Armitage

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A number of exploration geologists and prospectors provided excellent information and showed me a number of significant occurrences. I also greatly appreciate the assistance of the many residents who led me to obscure occurrences and gave permission to enter their property.

I thank all my colleagues at NSDME but particularly J. D. Keppie, A. K. Chatterjee, J. M. Patterson, G. O'Reilly and D. Kontak for their time in the field and helpful discussion. A very special thank you to G. DeMont who coordinated his library research with my needs in the field, for bringing to my attention a number of significant occurrences and for accompanying me in the field to examine them. Finally, a sincere thank you to my field partner, Allan Armitage, for an excellent 1988 field season.

FOLLY MOUNTAIN

OCCURRENCE: FOLLY MOUNTAIN E05-01
(a) FOLLY MOUNTAIN RAILROAD
(b) FOLLY RIVER
(c) FOLLY MOUNTAIN HIGHWAY

LOCATION: (a) 5037490 N 458600 E NTS 11E/05 D
(b) 5037300 N 458800 E
(c) 5037270 N 458280 E

ACCESS:

(a) From Highway 104 overpass, 1.1 km north of Folly Mountain, walk north 650 m along the CNR tracks to the occurrence which is in the second railway cut.

(b) From Highway 104 overpass, 1.1 km north of Folly Mountain, walk 200 m north along the CNR tracks to stream tunnel under the tracks. Follow this stream east to Folly River then follow the west bank of the river 200 m north to the mineralized outcrop.

(c) From Highway 104 overpass, 1.1 km north of Folly Mountain, drive north 0.4 km to cleared area on the west side of the highway. Iron-mineralized veins and brecciated zones occur with lesser copper mineralization in siliceous zones.

REFERENCES:

Donohoe, H. V. Jr., Wallace, P. I., 1978. Geology Map of the Cobequid Highlands. NSDME Preliminary Map 78-1.

Donohoe, H. V. Jr., 1981. Mineral Occurrences in the Cobequid Highlands; *In* Mineral Resources Division, Report of Activities, ed. K. A. Mills, NSDME Report 82-1, p. 79-112.

Donohoe, H. V. Jr., Wallace, P. I., 1982. Geological Map of the Cobequid Highlands, Colchester, Cumberland and Pictou Counties, Nova Scotia; 4 sheets, plus legend; NSDME maps 82-06, -07, -08, -09, scale 1:50 000.

Murphy, J. B., Pe-Piper, G., Nance, D., Turner, D. and Piper, D. J. W., 1988. Preliminary Geological Map of the Eastern Cobequid Highlands; GSC Open File 1755, 2 sheets, scale 1:50 000.

NSDME AR 11E/05D 13-D-56 (00-03) Copper, Folly River.

GEOLOGY: (Donohoe and Wallace, 1982)

The mineralization is in Carboniferous Londonderry Formation (C_{LD}), bounded on the north by the Londonderry Fault and by the Cobequid Fault on the south. The rocks include green, green-grey lithic, feldspathic and quartz wacke, purple shale and siltstone (Donohoe and Wallace, 1982).

PREVIOUS WORK: (DeMont)

1963 Noranda, NSDME AR 11E/05D 13-D-56 (00-03)

(a) Folly Mountain Railroad. Chalcopyrite and bornite mineralization was found in a 3 m band of silicified sediments and gave values of 1.32% Cu over 1.5 m.

A trench to the east of the rock cut exposed a 4.6 m band of silicified sediments with disseminated pyrite, chalcopyrite and minor bornite.

A soil geochemical anomaly with values up to 10,000 ppm Cu covers the mineralized area.

RESULTS OF 1988 FIELD CHECK: (Northcote and Armitage)

(a) Folly Mountain Railray Cut:

The second railway cut contains bedded iron-stained siltstone, sandstone and impure quartzite.

Bedding 020°/ 40° SE

The iron staining extends for about 100 m from near the south end of the outcrop zone to a point about midway through the cut. Iron-stained fractures and ankerite/ siderite veinlets become more abundant toward the middle of the zone where there is a 2-3 m zone of copper mineralization marked by malachite and very minor azurite with iron- and manganese-staining. One section of about 2.5 m contains disseminated chalcopyrite in impure quartzite containing numerous small quartz veinlets. The attitude of the mineralized zone is approximately 034° / 46° SE and is exposed in both walls of the railway cut.

(b) Folly River:

Copper mineralization occurs in quartzite and impure quartzite - sandstone, with argillaceous sections.

Malachite was observed in the more shaly section near the middle of the exposure and some chalcopyrite was found associated with quartz veinlets. A few metres to the south there are zones of porous, deeply leached quartzite/sandstone with limonite which fills drusy pits, fractures and stains the matrix. By digging into the outcrop it was found that the leached zone is flanked on the south by significant chalcopyrite mineralization associated with quartz-veining and siliceous impregnation.

In the same outcrop there are disrupted gash veinlets of siderite/ankerite which appear to be unrelated to silicification.

There is abundant float of argillaceous and silty rocks containing ankerite / siderite veins upstream from the occurrence. There is also a small boulder of porous / drusy quartzite containing malachite and some disseminated chalcopyrite, suggesting that there may be additional occurrences upstream.

(c) Folly Mountain Highway:

The stripped area on the west side of the highway is underlain by argillaceous siltstone, impure quartzite and sandstone. There is abundant iron staining throughout the pit area.

There are numerous veins and brecciated zones containing ankerite/siderite with minor hematite. The iron mineralization is particularly abundant close to the highway near the middle of the stripped area.

A small occurrence of copper mineralization was found in a small depression near the west side of the pit (Armitage). Disseminated chalcopyrite is in sandstone / greywacke and malacite is on fracture surfaces. The mineralization trends about 076°.

Suites of samples were taken from each locality for cursory petrographic analyses and representative samples were sent to Bondar Clegg, Ottawa, for a combination of Direct Irradiation/INAA and Atomic Absorption analyses. Table 1 provides a brief description of the samples and Table 2 lists the analytical results. Table 3 summarizes anomalous values.

Significance:

The Folly Mountain copper-bearing silicified zone occurrences, although commonly

spatially associated, appear to have no genetic relationship to iron carbonate vein breccia systems which are so widespread and abundant in the Londonderry Formation or its equivalent. The Folly Mountain occurrences are tectonically controlled siliceous hydrothermal vein breccia systems with some stratiform control. The Folly Mountain occurrences, although not yet shown to be of economic size and grade are of metallogenic significance for Fe, As and Cu and are weakly anomalous in Au, Co, and Ni.

TABLE 1
FOLLY MOUNTAIN AREA SAMPLES

(a) Folly Mountain Railroad:

88 FM 4201 Bleached, argillaceous siltstone, veined by ankerite. Mn stain in incipient fractures.

88 FM 4201 A and B Argillaceous siltstone/fine sandstone. Limonite in discontinuous crackle fractures. Discontinuous minute quartz veinlets.

88 FM 4202 Impure sandstone, diffuse interrupted quartz veinlets. Chalcopyrite, pyrite and (black mineral, not sphalerite) in incipient fractures. Diffuse, interrupted, very fine pyrite veinlets/segregations.

88 FM 4202 A Sandstone, iron-stained, malachite; chalcopyrite and pyrite disseminations and pods in incipient crackle fractures. Some disseminated sulphides with no apparent relation to fractures. Black mineral (not sphalerite) in incipient fractures. Discontinuous quartz veinlets.

88 FM 4202 B As for 4202 A.

88 FM 4202 C and D Sandstone, as described above, disseminated malachite and lesser chalcopyrite. Iron and manganese stain. Most copper mineralization appears to be related to incipient fractures.

88 FM 4202 E Disrupted quartz veinlets and veins. Disseminations and segregations of fine pyrite with minor chalcopyrite. Fine diffuse dark mineral (not sphalerite).

88 FM 4202 F Sandstone, mottled by iron-staining. Diffuse veining and silicification. Disseminated malachite.

88 FM 4203 Iron-stained, impure sandstone/siltstone. Crackle fractures limonitic, if open; later generations healed by drusy, hairline, disrupted quartz veinlets.

88 FM 4204 Argillaceous siltstone/sandstone. Open crackle fractures in a criss-cross pattern partly filled by quartz; others filled by limonite.

(b) Folly River:

88 FR 4301 Impure quartzite/sandstone. Disseminated malachite, minor chalcopyrite.

88 FR 4302 Impure quartzite/sandstone. Chalcopyrite in quartz veinlets.

88 FR 4303 Impure quartzite/sandstone. Pyrite, ankerite/siderite veining from 50 m upstream.

(c) Folly Highway:

88 FR 4401 Impure quartzite/sandstone. Disseminated chalcopyrite, and with malachite on fracture surfaces.

88 FR 4402 Impure quartzite/sandstone, argillaceous siltstone veined and breccia matrix filled by ankerite, siderite and lesser hematite.

TABLE 3
FOLLY MOUNTAIN ANOMALOUS VALUES

Sample	Fe%	As ppm	Cu ppm	Co ppm	Au ppb	Ni ppm
(a) Railway						
4201	2.1	--	--	--	--	--
4202	3.2	51.6	4090	--	42	--
			0.38%		(38)	--
4203	2.8	--	164	--	--	--
4204	3.7	--	--	--	--	--
(b) River						
4301	2.8	276	2210	--	38	--
			0.18%		(32)	
4302	1.0	--	933	--	12	--
					(11)	
4303	0.9	--	1238	--	21	--
					(18)	
4304	4.9	114	--	593	8	--
					(7)	
(c) Highway						
4401	1.4	1160	1260	270	58	190
					(45)	
4402	13.0	--	--	--	--	--

FOLLY MOUNTAIN AREA E05-1
(a) Railroad
(b) Folly River
(c) Highway
NTS 11E/5D
Figure 1

E 2

FOLLY MOUNTAIN AREA ANALYSES

FOLLY MOUNTAIN RR Au + 33 (ppm unless otherwise indicated)

88-FM	Mo%	Sr	Cr	Pb%	Co	Ni	Zn																											
4201	0.156	7.00	220	2.1	166	67	<100	51.2				1																						
4202	0.17	9.20	2200	3.2		28	<100	15.8																										
4203	0.16	7.40	2200	2.8	136	28	<100	44																										
4204	0.12	8	230	3.7	14	28	<100	44																										

FOLLY MOUNTAIN RR ATOMIC ABSORPTION (ppm unless otherwise indicated)

88-FM	Cu	Zn	Ag	Pb	Au ppb
4201	78	81	<0.1	18	5
4202	1696	42	<0.2	28	30
4203	164	283	<0.1	8	<5
4204	58	23	<0.1	8	<5

FOLLY MOUNTAIN RR ASSAYS

88-FM	Cu%	Pb%	Zn%
4201	0.01	<0.01	<0.01
4202	0.38	<0.01	<0.01

FOLLY RIVER Au + 33 (ppm unless otherwise indicated)

88-FR	Mo%	Sr	Cr	Pb%	Co	Ni	Zn																											
4301	0.13	7.00	270	2.8	166	67	<100	58.2				1																						
4302	1.1	4.20	1900	1	116	<200	<100	5.1																										
4303	1.1	4.60	1900	0.8	116	<200	<100	11.8																										
4304	0.13	10	210	4.8	595	43	<100	114																										

FOLLY RIVER ATOMIC ABSORPTION (ppm unless otherwise indicated)

88-FR	Cu	Zn	Ag	Pb	Au ppb
4301	2216	231	1.8	33	52
4302	933	28	<0.1	168	11
4303	1238	13	<0.1	148	10
4304	84	7	<0.1	14	7

FOLLY RIVER ASSAYS

88-FR	Cu%	Pb%	Zn%
4301	0.18	<0.01	<0.02
4302	0.09	<0.01	<0.01

FOLLY HIGHWAY Au + 33 (ppm unless otherwise indicated)

88-FH	Mo%	Sr	Cr	Pb%	Co	Ni	Zn																											
4401	0.33	8.8	360	1.4	226	198	<100	1182				2																						
4402	0.17	18	51	15	22	88	<100	0.1				<2																						

FOLLY HIGHWAY ATOMIC ABSORPTION (ppm unless otherwise indicated)

88-FH	Cu	Zn	Ag	Pb	Au ppb
4401	1208	7	<0.1	8	45
4402	8	15	<0.1	8	<5

MIDDLE PORTAPIQUE RIVER

OCCURRENCE: MIDDLE PORTAPIQUE RIVER E05-02 (Minor copper)

LOCATION: 5036180 N 443960 E NTS 11E/05D

ACCESS:

From Portapique drive north 2.5 km to Montrose cross roads. Turn west, cross Portapique River and go 1.6 km northwest past West Montrose junction, to Old Castlereigh Road. Continue 175 m up Old Castlereigh road to a small access road leading north (right). Follow this road for 3.5 km to the old campsite where the road becomes a trail continuing along the hillside on the west side of Portapique River. From the campsite, follow the river for about 1.3 km, past weakly mineralized outcrops and a major tributary entering from the west. The tributary is approximately 200 m downstream from a small adit on the east side of the river just beyond the first major bend (Fig. 1).

An old trench with no bedrock exposed is located on the south side of the headwaters of a stream tributary entering from the west. This location is accessible by a system of logging roads leading from the north and west off Old Castlereigh Road.

REFERENCES:

Donohoe, H. V., Jr. and Wallace, P. I., 1978. Geology Map of the Cobequid Highlands; NSDME Preliminary Map 78-1.

Donohoe, H. V., Jr., 1981. Mineral Occurrences in the Cobequid Highlands; *In* Mineral Resources Division, Report of Activities 1981, ed. K. A. Mills, NSDME Report 82-1, p. 79-112.

Donohoe, H. V., Jr. and Wallace, P. I., 1982. Geological Map of the Cobequid Highlands, Colchester, Cumberland and Pictou Counties, Nova Scotia; 4 sheets plus legend; NSDME Maps 82-06, -07, -08, -09, scale 1:50 000.

NSDME ASSESSMENT REPORT 11E/05D 13-D-39 (01-04) Copper, Portapique.
11E/05D CL19 (03-04) Base metals, Londonderry.

GEOLOGY: (Donohoe and Wallace, 1982).

The Middle Portapique occurrence is in Carboniferous Londonderry Formation rocks, bounded on the north by the Londonderry Fault and on the south by the Cobequid Fault. The Londonderry Formation is composed of green, green-grey lithic, feldspathic and quartz wacke, purple shale and siltstone.

RESULTS OF 1988 FIELD CHECK: (Armitage and Northcote)

A traverse by Armitage along the Portapique River showed predominantly calcareous and siliceous siltstone cut by calcite veins. Just below the junction of a major tributary entering the Portapique River from the west, there is some malachite staining in greywacke. A small adit, 3.1 m high, 2.8 m wide and 1 m deep, was located on the east bank of the Portapique River, 400 m upstream from the tributary, just around the first major bend. Although there was very minor pyrite and a trace of chalcopyrite, no significant mineralization was observed. Three bags of chip samples were collected from the vicinity of the adit.

The tributary entering from the west (400 m below the adit) exposes a succession of siltstone, greywacke and impure quartzite which is very weakly mineralized

with very minor disseminated pyrite and a trace of chalcopyrite. A sample from this area was taken for analysis.

A partially waterfilled and slumped bulldozer trench, 130 m long and trending north, was found on the south side of the headwaters of the gully mentioned above.

Table 1 briefly describes the samples submitted to Bondar Clegg Laboratory, Ottawa, for a combination of Direct Irradiation/INAA and Atomic Absorption analyses. Table 2 gives the results of these analyses.

TABLE 1
MIDDLE PORTAPIQUE RIVER SAMPLES

88 PR 4801	Calcareous siltstone with calcite veins. Iron-stained with no visible mineralization. At the site of the adit on the east side of Portapique River. Chip sample.
88 PR 4802	Siliceous siltstone with calcite veins. No visible mineralization. At the site of the adit on the east side of Portapique River. Chip sample.
88 PR 4803	Siltstone, blue-grey. At the site of the adit on the east side of Portapique River. Chip sample.
88 PR 4804	Siltstone, greywacke, impure quartzite, minor disseminated pyrite and a trace of chalcopyrite (1 grain). Sample was taken approximately half way up the tributary.

Results of Analyses:

No metallic mineralization of economic or metallogenic significance was located by this field examination.

MIDDLE PORTAPIQUE RIVER E05-02
NTS 11E/05D
Figure 1

TABLE 2
PORTAPIQUE RIVER ANALYSES

PORTAPIQUE RIVER Au + 33 (ppm unless otherwise indicated)

88-PR	NaX	Sc	Cr	FeX	Co	Ni	Zn	As	Se	Br	Rb	Zr	Mo	Ag	Cd	Sn	Sb	T
4001	0.17	5.3	370	2.5	7	<20	<100	2.7	<5	<2	58	510	1	<2	<5	<100	0.7	<1
4002	1.1	10	100	2.5	5	30	100	3.4	<5	<2	170	300	<1	<2	<5	<100	0.7	1
4003	0.49	10	310	2.4	<5	21	220	3.4	<5	<2	87	450	<1	<2	<5	<100	0.5	<1
4004	0.69	11	290	3.3	15	<20	<100	3.1	<5	<2	85	360	<1	<2	<5	<100	0.4	<1

PORTAPIQUE RIVER ATOMIC ABSORPTION (ppm unless otherwise indicated)

88-PR	Cu	Zn	Ag	Pb	Au ppb
4001	4	41	<0.1	13	<5
4002	8	100	<0.1	15	<5
4003	8	190	<0.1	100	<5
4004	6	57	<0.1	13	<5

<1																				
<1	0.7	<10	1.8	190	58	14	2	<1	0.7	<2	0.2	15	0.6	<1	<50	<2	5.5	1.6	48.16	
<1	0.7	11	1.5	400	58	110	10	<2	1.3	0.4	0.5	15	1.1	2	<50	<2	14	3.4	48.54	
<1	0.5	<10	2.7	400	42	41	5.1	<1	1.1	2	0.5	15	1.1	1	<50	<2	11	3.1	47	
<1	0.4	<10	2.7	380	15	36	3.3	<1	0.5	2	0.3	10	1.1	1	<50	<2	4.4	1.9	51.81	

PORTAPIQUE RIVER

OCCURRENCE: PORTAPIQUE RIVER E5-10 (Minor pyrite, weakly anomalous in As and Au)

LOCATION: 5038150 N 444275 E NTS 11E/05D
This covers the location given on old MOD card.

ACCESS:

From Londonderry drive north on the main road up Great Village River, crossing to the west side of the river 1.75 km north of Londonderry. Drive an additional 6.3 km to the midpoint of the west side of Sutherland Lake. Drive west-southwest on access road, just past Dominic Meadow, for a total of 3.5 km. Then, on a bearing of 135°, walk 0.5 km to tributary of Portapique River. Walk downstream to the start of continuous outcrop.

REFERENCES:

Donohoe, H. V., Jr. and Wallace, P. I., 1978. Geology Map of the Cobequid Highlands; NSDME Preliminary Map 78-1.

Donohoe, H. V., Jr., 1981. Mineral Occurrences in the Cobequid Highlands; *In* Mineral Resources Division, Report of Activities 1981, ed. K. A. Mills, NSDME Report 82-1, p. 79-112.

Donohoe, H. V., Jr. and Wallace, P. I., 1982. Geological Map of the Cobequid Highlands, Colchester, Cumberland and Pictou Counties, Nova Scotia; 4 sheets plus legend, NSDME Maps 82-06, -07, -08, -09, scale 1:50 000.

GEOLOGY:

The occurrence is located in schist/phyllitic quartzite of the Silurian Wilson Brook (Sw) Formation immediately to the north of the Rockland Brook fault. Donohoe and Wallace (1982) describe this formation as consisting of grey to black siltstone, shale, minor wacke, tuff and quartz wacke.

RESULTS OF THE 1988 FIELD CHECK: (Northcote and Armitage)

Nearly continuous outcrop occurs for several hundred metres along this upper Portapique River tributary. The country rocks are foliated phyllitic (sericitic) impure quartzites with foliation oriented 080° - 095°/50° - 60° S.

Quartz lensoids up to 10 or 15 cm thick with lateral extent of several metres lie along the plane of foliation. These quartz lensoids are crosscut by a later generation of more vitreous quartz veinlets filling gash fractures. The veinlets are generally restricted to the quartz lensoids but may extend outwards into the wallrocks as narrow discontinuous veinlets or clusters of veinlets generally with fairly regular attitude. The quartz lensoids and veinlets are probably derived from country rocks as silica "sweats" during deformation.

No significant mineralization was noted in the outcrop area other than weakly disseminated euhedral pyrite crystals. Iron staining was noted on most fracture surfaces.

Five samples were collected for cursory petrographic examination and geochemical analyses by Direct Irradiation/INAA for Au + 33 additional elements; by Atomic Absorption for Cu, Pb, Zn and Ag and by Fire Assay/AA for Au. Table 1 gives a description of the samples and Table 2 lists the results of the analyses.

TABLE 1
PORTAPIQUE E5-10 SAMPLES

88-PR-2501	Metasediment, quartz - sericite grains impregnated and criss-cross veined by quartz. Widely to sparsely disseminated euhedral pyrite. Iron-stained fracture surfaces. Weathered-out pits. Noncalcareous.
88-PR-2503	Metasediment, impure quartzite to very fine grained siltstone, veined and impregnated by quartz. Brecciated with chlorite segregations with sericite in open spaces (fractures). Noncalcareous.
88-PR-2504	As for 2503. Slightly greenish-brown tint indicating greater impurities. Veining by quartz and slightly softer noncalcareous vein material (barite is not indicated by analyses).
88-PR-2505	Impure quartzite/siltstone, crackle breccited, some interbedded chloritic (argillaceous) laminations. Veining by quartz and slightly softer noncalcareous vein material, siliceous impregnations. Chlorite and sericite in fractures, open spaces.

Results of the Analyses:

The analyses indicate nothing of economic significance. Slightly anomalous arsenic and gold values in the following samples are of metallogenic significance:

TABLE 3
PORTAPIQUE E5-10 ANOMALOUS VALUES

Sample	As ppm	Au ppb
2501	574	37(66)*
2503	105	5(21)
2504		3(12)

* Au by Fire assay/AA analyses

PORTAPIQUE RIVER E05-11

OCCURRENCE: PORTAPIQUE RIVER E05-11

LOCATION: 5037730 N 444260 E NTS 11E/05D

ACCESS:

From Londonderry drive north on the main road up Great Village River, crossing to the west side of the river 1.75 km north of Londonderry. Drive an additional 6.3 km to the midpoint of the west side of Sutherland Lake. Drive west-southwest on access road, just past Dominic Meadow, for a total of 3.5 km. Then walk southeast to the northeast tributary of Portapique River. Walk downstream through phyllitic quartzite schist, across the Rockland Brook Fault, into the Great Village River Gneiss.

REFERENCES:

Donohoe, H. V., Jr. and Wallace, P. I., 1978. Geology Map of the Cobequid Highlands; NSDME Preliminary Map 78-1.

Donohoe, H. V., Jr., 1981. Mineral Occurrences in the Cobequid Highlands; *In* Mineral Resources Division, Report of Activities 1981, ed. K. A. Mills, NSDME Report 82-1, p. 79-112.

Donohoe, H. V., Jr. and Wallace, P. I., 1982. Geological Map of the Cobequid Highlands, Colchester, Cumberland and Pictou Counties, Nova Scotia; 4 sheets plus legend, NSDME Maps 82-06, -07, -08, -09, scale 1:50 000,.

GEOLOGY:

Old MOD cards and a geologic map by Donohoe and Wallace (1982) show a Pb, Cu occurrence in Great Village River Gneiss (PVG) at this location. A general description of the gneiss (Donohoe and Wallace, 1982) is: grey hornblende ± biotite ± quartz ± chlorite ± feldspar gneisses, dark green amphibolite, grey-tan granitoid gneisses. The locality of the occurrence lies immediately to the south of the Rockland Brook Fault.

RESULTS OF THE 1988 FIELD CHECK: (Northcote and Armitage)

Discontinuous outcrops of gneissic rock, ranging from hornblende-biotite-quartz-chlorite-feldspar gneisses, amphibolite, and granitoid gneisses outcrop in the stream gully. Four sets of samples were taken for petrographic examination and chemical analyses. The samples were analyzed at Bondar Clegg, Ottawa, by a combination of Direct Irradiation/INAA gold + 33 and Atomic Absorption for 37 elements. Table 1 gives a brief description of the samples and Table 2 lists the results of the analyses.

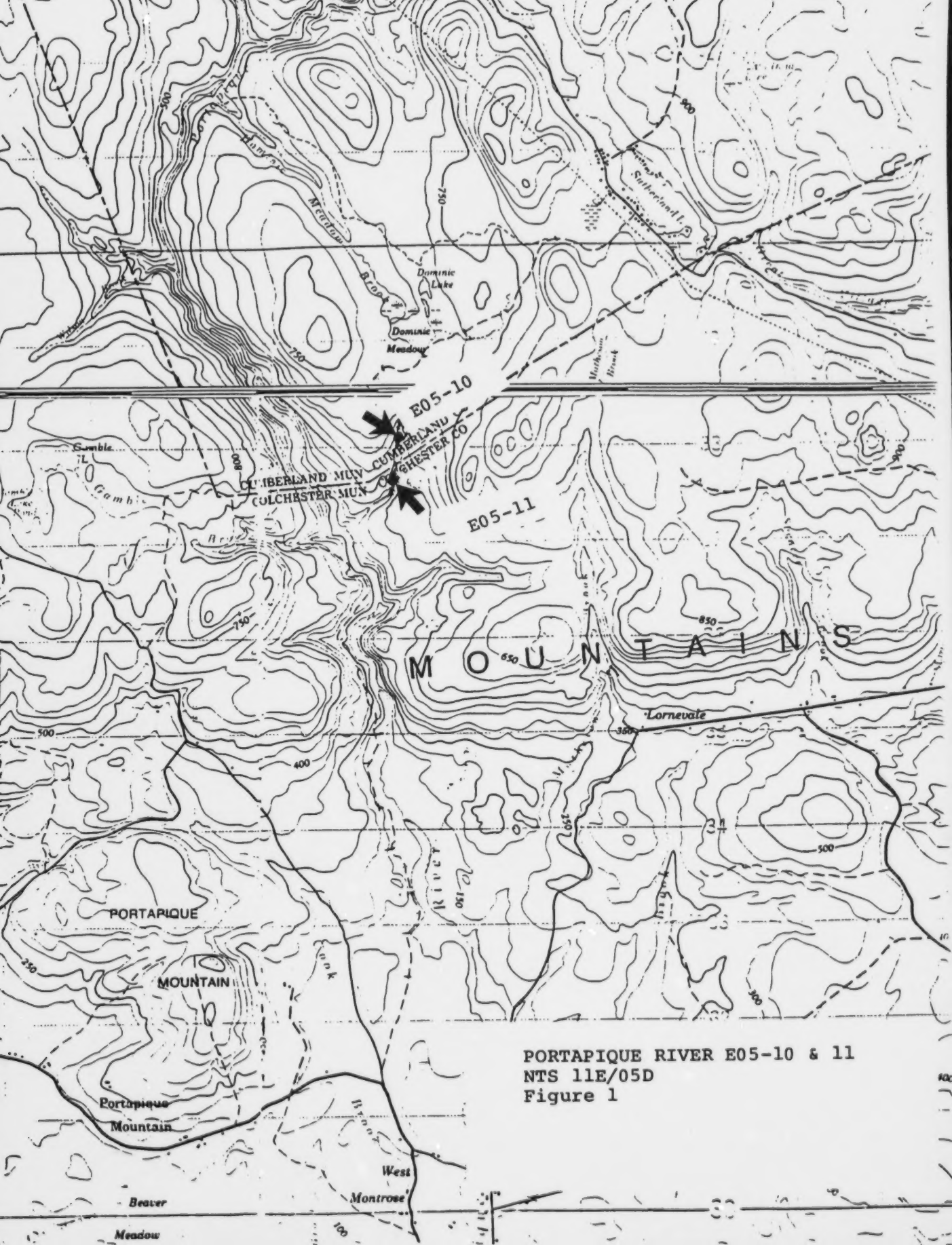
Analytical results:

This cursory examination shows nothing of economic or metallogenic significance (Table 2).

TABLE 1

PORTAPIQUE RIVER E05/11 SAMPLES

88-PR-2601	Amphibolite(?); feldspar and hornblende(?), medium- to fine-grained, dense. Pyrite disseminated and as blebs/interrupted veinlets in fractures. Iron-stained fracture surfaces.
88-PR-2602	Hornfels/amphibolite; feldspar, hornblende, mica (biotite), very fine grained, dense. Interlocking grains. Euhedral pyrite, moderately disseminated, and commonly in fractures and incipient fractures.
88-PR-2603	Amphibole mica hornfels; very fine grained, dense, interlocking grains. Hairline veinlets, feldspar and epidote and soft mineral. Weak disseminated pyrite.
88-PR-2604	Amphibole - mica hornfels/gneiss; very fine grained, dense but shows more conspicuous foliation than the other samples. Cut by irregular/ diffuse quartz veinlets (dykelets) containing small clusters of fragments of wallrock.
88-PR-2605	Porphyritic diorite (?); fine- to medium-grained feldspar phenocrysts (porphyroblasts) in a very fine grained matrix. Crackled and filled with hairline irregular white quartz veinlets. Dykelets of more leucocratic phases.
88-PR-2606	Gneiss, fine- to medium-grained, mafic-rich and feldspar-rich foliation. Weak disseminated pyrite. Lighter foliations are slightly coarser grained than mafic-rich laminae.



PORTAPIQUE RIVER E05-10 & 11
NTS 11E/05D
Figure 1

TABLE 2
UPPER PORTAPIQUE RIVER ANALYSES

PORTAPIQUE RIVER Au + 33 (ppm unless otherwise indicated)

88-PR #	NaX	Sc	Cr	FeX	Co	Ni	Zn	As	Br	Rb	Zr	Mo	Ag	Cd	Sb	Te	Cs	Ba	La	Ce	Nd	Sm	Eu	Tb	Yb	Lu	Hf	Ta	W	Ir ppb	Au	Th	U	WT
2501	0.52	8.8	210	4.7	16	<147	<1000	572			348	3			1.6	<10	1.6							1.4			10	1.2	2	<50	37	19.4	2.8	40.08
2503	0.4	7.2	220	4.8	12	<20	<100	105			30	1			1.7	<10	1.8							1.1			9	0.9	1	<50	7	13	1.9	41.21
2504	0.53	10	190	4.1	12	<100	80				42	1			1.7	<10	1.8							1.1			10	1.1	1	<50		10	2.8	37.9
2505	0.44	8.9	170	3	10	240	<100	20			83	0			1.4	<10	1.5							1.1			8	1.2	1	<50	<2	9.2	2.5	42.54
88-PR #2																																		
2601	2.47	36.2	81	12	46	23	120	28		0.4	128				0.7	<10	5.8							1.1			11	2.8	<2	<50	<2	4.8	1.8	48.19
2602	2.51	43	81	13	83	341	2000	28			97				2.1	<10	1.4							0.5			8	1.6	<1	<50	<2	2.3	0.7	44.56
2603	2.36	43.8	59	12	61	<20	140	14			70				0.8	<10	2.4							0.8			7	1.6	<1	<50	<2	2.4	1.1	45.33
2604	2.7	34.5	200	9.3	48	150	170	5.3			140				0.7	<10	5.8							0.9			4	0.8	<1	<50	2	0.8	1.7	44.48

PORTAPIQUE RIVER ATOMIC ABSORPTION (ppm unless otherwise indicated)

88-PR #	V	Cu	Zn	Ag	Pb	Au ppb
2501	26	43	35	<0.1	17	88
2503	15	17	77	<0.1	11	21
2504	26	9	59	<0.1	7	12
2505	21	14	73	<0.1	16	<5
88-PR #2						
2601	117	22	78	<0.1	11	5
2602	156	38	59	<0.1	21	<5
2603	144	28	53	<0.1	7	<5
2604	83	12	81	<0.1	6	<5

OLD CASTLEREIGH

OCCURRENCE: **OLD CASTLEREIGH E11-29 (Iron, (copper))**
New occurrence found by David Mossman (Mount Allison)

LOCATION: **5035080 N 441930 E NTS 11E/05D**

ACCESS:

The occurrence is 5.25 km north of West Montrose junction in a rock quarry on the east side of Old Castlereigh Road 150 m above the junction with the main Castlereigh road (Fig. 1).

REFERENCES:

Donohoe, H. V., Jr. and Wallace, P. I., 1978. Geology Map of the Cobequid Highlands; NSDME Preliminary Map 78-1.

Donohoe, H. V., Jr., 1981. Mineral Occurrences in the Cobequid Highlands; *In* Mineral Resources Division, Report of Activities 1981, ed. K. A. Mills, NSDME Report 82-1, p. 79-112.

Donohoe, H. V., Jr. and Wallace, P. I., 1982. Geological Map of the Cobequid Highlands, Colchester, Cumberland and Pictou Counties, Nova Scotia; 4 sheets plus legend, NSDME Maps 82-06, -07, -08, -09, scale 1:50 000.

Murphy, J. B., Pe-Piper, G., Nance, D., Turner, D. and Piper, D. J. W., 1988. Preliminary Geological Map of the Eastern Cobequid Highlands; GSC Open File 1755, 2 sheets, scale 1:50 000.

GEOLOGY: (Donohoe and Wallace, 1982)

The occurrence is in the Carboniferous Londonderry Formation, bounded on the north by the Londonderry Fault and on the south by the Cobequid Fault. The Londonderry Formation is composed of green, green-grey lithic, feldspathic and quartz wacke, purple shale and siltstone.

RESULTS OF 1988 FIELD CHECK: (Northcote and Armitage)

Occurs in shales and argillaceous siltstone of the Londonderry Formation.

Bedding: 116°/51° NE

There are 3 zones of mineralized quartz and carbonate veining cutting across but locally following bedding/foliation. The carbonate veins are composed of iron-stained calcite, ankerite and siderite.

Zone #1. (West central part of pit)

The vein and fracture systems contain irregular, drusy/vuggy limonite cavity fillings probably after weathered-out carbonate and are mineralized by specularite. No chalcopyrite was observed at zone 1.

Zone #2. (Central part of pit)

Irregular carbonate and quartz veining, mineralized by specularite and very minor chalcopyrite. Armitage noted that this copper mineralization differs from other siliceous zones in the Londonderry Formation because here chalcopyrite is associated with calcite and not with quartz.

Zone #3. (Northwest edge of pit)

Drusy quartz veins, iron-stained, mineralized by specular hematite. Near vertical attitude.

Table 1 gives a brief description of samples sent to Bondar Clegg Laboratory, Ottawa, for a combination of Direct Irradiation/INAA and Atomic Absorption analyses. Table 2 lists the results of the analyses.

TABLE 1
OLD CASTLEREIGH SAMPLES

88 OC 4901	Greywacke with veins of quartz, calcite, ankerite and siderite, mineralized by specular hematite, minor pyrite.
88 OC 4902	Calcite veining with specular hematite and chalcopyrite in siliceous siltstone.

Results:

Examination of outcrop, hand specimens and chemical analyses indicate no mineralization of economic significance, and only iron of metallogenic significance.

OLD CASTLEREIGH E11-29
NTS 11E/05D
Figure 1

TABLE 1
OLD CASTLEREIGH SAMPLES

OLD CASTLEREIGH Au + 33 (ppm unless otherwise indicated)

G-OC	NaX	Sc	Cr	FeX	Co	Ni	Zn	As	Se	Br	Rb	Zr	Mo	Ag	Cd	Sn	Sb	Ta
4901	0.75	0.7	240	10	31	34	<100	5.2	<5	<2	60	470	<1	<2	<5	<100	0.6	<1
4902	0.08	5.5	120	1.5	6	<20	<100	3.5	<5	<2	8	<200	1	<2	<5	<100	0.2	<1

OLD CASTLEREIGH ATOMIC ABSORPTION (ppm unless otherwise indicated)

G-OC	Cu	Zn	Ag	Pb	Au ppb
4901	59	12	0.2	5	<5
4902	207	15	<0.1	11	<5

Sb	Ta	Ce	Ba	La	Ce	Sm	Eu	Tb	Yb	Lu	Hf	Ta	W	Ir	Au	Pb	Th	U	WT
0.6	<10	2.2	230	20	70	9.2	1	1.4	3	0.4	9	1	4	<50		<2	0.6	2.3	49.24
0.2	<10	0.8	150	20	30	9	2	3.7	.8	1.1	<1	<0.5	<1	<50		<2	0.5	0.2	46.10

STEELE RUN

OCCURRENCE: STEELE RUN E06-01 (Copper, iron, (cobalt, gold))
MOUNT THOM

LOCATION: 5037900 N 497460 E Trench NTS 11E/06D, 11E/11A
5037770 N 497330 E Drilling

ACCESS:

Leave the Trans-Canada Highway 104 and turn onto the old Highway #4 leading north at a point 1.3 km southwest of Pictou - Colchester municipality boundary. Drive north 2.2 km to Proudfoot road. Turn west on Proudfoot road, cross bridge over Steele Run, and drive a total of 0.75 km to a point where Proudfoot Road branches. Take the southwest branch 200 m to another small access road leading south. Follow this road south for a total of 400 m, past a hunter's cabin and down a steep grade towards the river to the first trenched area. A second trenched area is located 120 m west.

REFERENCES:

Donohoe, H. V., Jr. and Wallace, P. I., 1978. Geology Map of the Cobequid Highlands; NSDME Preliminary Map 78-1.

Donohoe, H. V., Jr., 1981. Mineral Occurrences in the Cobequid Highlands; *In* Mineral Resources Division, Report of Activities 1981, ed. K. A. Mills, NSDME Report 82-1, p. 79-112.

Donohoe, H. V., Jr. and Wallace, P. I., 1982. Geological Map of the Cobequid Highlands, Colchester, Cumberland and Pictou Counties, Nova Scotia; 4 sheets plus legend, NSDME Maps 82-06, -07, -08, -09, scale 1:50 000.

Murphy, J. B., Pe-Piper, G., Nance, D., Turner, D. and Piper, D. J. W., 1988. Preliminary Geological Map of the Eastern Cobequid Highlands; GSC Open File 1755, 2 sheets, scale 1:50 000.

NSDME ASSESSMENT REPORT 11E/06D 07-0-44 (01,02,03,04,06,08,09)
11E/11A 13-M-18 (01)

PREVIOUS WORK:

1969 AR 11E/06D 07-D-44 (01) Imperial Oil Enterprises Ltd.
Geochemical soil survey, geological mapping.

1970 AR 11E/06D 07-D-44 (02) Imperial Oil Enterprises Ltd.
Geophysical induced polarization survey.

AR 11E/06D 07-D-44 (03) Imperial Oil Enterprises Ltd.
Detailed geochemical soil and stream sediment sampling, Cu, Pb, Zn. Geological mapping (scales 1" to 400' and 1:50 000). Bulldozer trenching and prospecting.

AR 11E/06D 07-D-44 (04) Imperial Oil Enterprises Ltd.
Detailed geological mapping (Zia-ul Hasan).

197' AR 11E/06D 07-D-44 (06) Imperial Oil Enterprises Ltd.
Geochemical stream sediment and soil survey, Cu.
Geophysical survey, induced polarization.

AR 11E/06D 07-D-44 (08) Imperial Oil Enterprises Ltd.
Geophysical surveys, induced polarization and resistivity.

AR 11E/06D 07-D-44 (09) Imperial Oil Enterprises Ltd.
Diamond-drilling 47 holes totalling approximately 3185 m (10450 ft). Most drillholes were assayed for Cu, with selected holes for Au and Ag.

Locations of diamond-drill holes are shown on Figure 3 and analytical results are listed on Table 3.

AR 11E/11A 13-M-18 (01) Imperial Oil Enterprises Ltd.
Diamond-drilling, 1 hole approximately 624 m (2046 ft).

GEOLOGICAL DESCRIPTION: (From Donohoe, NSDME AR's, and Northcote)

The Steele Run mineral occurrence is underlain by Canso Group conglomerate, sandstone, siltstone and silty shale and shale (probably the equivalent of Londonderry Formation). The sediments are cut by quartz-feldspar porphyry/ diorite dykes.

The mineralization occurs where these sediments have been brecciated and altered by contact metamorphism (?) (mainly a baking effect). The breccia matrix is healed by siderite, ankerite, goethite, hematite, limonite and commonly pyrite and chalcopyrite.

Sulphide mineralization is in patches and appears to be structurally controlled. The bedding strikes northwest and dips about 60° northeast; the brecciated zone more or less follows the strike of the bedding and is approximately vertical. In fresh rock, fractures are filled with ankerite, siderite and hematite (goethite).

RESULTS OF 1988 FIELD CHECK (Northcote and Armitage)

Sulphide mineralization occurs in contact metamorphosed, brecciated sediments. Visible mineralization, in some cases exceeding 25% total sulphides, consists mainly of 2 or more generations of pyrite and lesser chalcopyrite in the following forms:

(a) diffuse fine pyrite disseminated throughout most fragments,
(b) bedded pyrite in granular masses forming layers in some sandstone/ siltstone fragments,
(c) granular pyrite and chalcopyrite in fractures cutting lithic fragments and extending out into the matrix and
(d) pyrite and chalcopyrite fragments with fine lithic fragments embedded in iron oxide and siderite matrix between fragments.

The gangue minerals in the breccia matrix and veins consist chiefly of iron oxides (hematite, goethite, limonite) and iron carbonates (siderite and ankerite). The iron oxide-rich breccia matrix is commonly pitted and drusy and forms a boxwork.

Six suites of samples were taken for petrographic and chemical analyses. Table 1 gives a description of hand specimens from each suite. There was no study made of polished thin sections. The samples were sent to Bondar Clegg Laboratory, Ottawa, for a combination of Direct Irradiation/INAA Au + 33 analyses, Atomic Absorption analyses for Cu, Zn, Ag, and Pb, Fire assay/AA for Au, and conventional assay for Cu, Pb, Zn, Co and As.

Results of Analyses:
The results of the analyses are given on Table 2 and produced significant values for Fe, Co, Ni, As and Au. Anomalous values are listed in Table 4.

TABLE 1
STEELE RUN SAMPLE DESCRIPTIONS

88 MT 1702	Breccia, angular, fine grained, quartzose (siliceous) sandstone/siltstone with: (1) diffuse fine pyrite disseminated throughout most fragments, (2) bedded pyrite in granular masses forming layering in some sandstone/siltstone fragments, (3) pyrite and chalcopyrite and sphalerite(?) in fractures cutting sandstone/siltstone fragments, (4) pyrite and chalcopyrite fragments with sandstone/siltstone fragments embedded in iron oxide matrix between fragments, (5) late fracture fillings in matrix, pitted and drusy forming a boxwork and (6) some fragments are rimmed by light bluish grey diffuse disseminated mineral (chalcocite? manganese oxide?) just inside the fragment boundary. Iron oxide matrix is pitted and drusy, and forms a boxwork.
88 MT 1702A	Breccia, angular fragments, laminated shale, siltstone, granular pyrite fragments, bedded granular pyrite in fragments. Some fragments have a cream porcelainous appearance but are soft. Matrix weathered to earthy red brown (goethite, hematite) in which there are smaller lithic and granular pyrite fragments and drusy boxworks. Fracture fillings and spaces in breccia matrix contain coarser pyrite and chalcopyrite.
88 MT 1702B	Breccia, pale cream and cream-grey argillaceous fragments with scattered fine sandstone/siltstone fragments. Abundant fragments show granular pyritic layering particularly the silty/sandy fragments. The granular pyritic layers are themselves broken up into fragments. Matrix is composed of finer lithic fragments and irregular masses of coarse granular pyrite and chalcopyrite. Weathered, forming earthy groundmass of orange-brown and brownish-red goethite and hematite. Weathered out boxworks.
88 MT 1702C	Breccia fragments, siliceous siltstone, pale laminated siltstone/argillite. Abundant (50%) granular pellets/subrounded fragments of pyrite and chalcopyrite with siliceous lithic granules. Pitted and iron-stained, limonite, goethite.
88 MT 1702D	Breccia, polymictic, sedimentary, cream siltstone and cream and cream-grey argillaceous fragments, many laminated by colour differences and granular pyrite. Chalcopyrite and coarser pyrite as blebs in lithic fragments but mostly fracture controlled through fragments and matrix.
88 MT 1702E	Breccia, fragments several cm to <1 mm, polymictic sedimentary, pale cream-grey, argillite/silty argillite, laminated, generally soft. Siltstone, pale cream-grey, siliceous. Some fragments, very siliceous, (quartz) cut through other fragments as veins. Matrix mainly iron oxide and very fine lithic fragments in which are embedded granular sulphide fragments. Mineralization: (1) diffuse whispy segregations of pyrite and chalcopyrite in lithic fragments with no obvious fracture control, (2) granular pyrite fragments and (3) segregations and clots of pyrite and chalcopyrite in lithic fragments and matrix where it appears to be fracture controlled with a coarser grained appearance.

Iron oxide matrix, earthy goethite, limonite, hematite, weathered out drusy boxwork areas in breccia matrix.

88 MT 1702F Breccia, polymictic sedimentary, pale cream argillaceous to clay. other fragments siliceous (quartzite), granular.
Mineralization:
(1) disseminated pyrite in siliceous (sericitic) granular fragments,
(2) subrounded pellets in a groundmass of goethite/hematite and
(3) seemingly fracture controlled pyrite and chalcopyrite.

88 MT 1702G "Dalmatianite", angular to subrounded, medium tan-grey fragments, very fine grained/aphanitic, hard (siliceous) in a cream white matrix of moderately hard clay-like textured material which scratches with a needle.
Ghost-like fragment approximately 2 cm diameter showing a similar spotted appearance but groundmass of the fragment is somewhat darker colour than the surrounding matrix.
Late crackle brecciation, white chalky clay-like mineral, some vugs. Not mineralized, although drusy, vuggy areas are iron-stained.

88 MT 1702H Polymictic breccia composed of sedimentary fragments of siltstone, fine sandstone, lesser argillite (bleached). Strong iron-staining.
Mineralization:
(1) pyritic pellets, chalcopyrite, both tarnished,
(2) disseminated grains of pyrite throughout fine granular (lithic) matrix and
(3) veining is not conspicuous.

88 MT 1702I Polymictic breccia, composed of sedimentary fragments of argillite, siliceous siltstone. Some fragments are strongly pyritic. Sideritic matrix.
Mineralization:
(1) strong siderite matrix infilling and
(2) lithic fragments with high content of sulphide grains.

88 MT 1702J Breccia, polymictic, most fragments <<0.5 cm to >1 cm, pale cream, argillaceous, siliceous silty/fine sandy. Some laminated by diffuse layers of sulphides. Abundant pyrite and chalcopyrite fragments with a fine to medium granular texture. Some lithic fragments contain abundant disseminated sulphides (pyrite, chalcopyrite).

88 MT 1702K Breccia, polymictic, lithic fragments, some with abundant disseminated sulphide (pyrite) and abundant pyrite fragments to 45%, most a few mm to several cm (lithic). Drusy, vuggy matrix, iron oxide boxwork, siderite.

88 MT 1703 Siltstone, pale cream-buff and cream-grey, siliceous, crackled, gash veinlets (quartz and siderite). Crackles filled with siderite preceded by an earlier generation of quartz with associated scattered blebs of pyrite and chalcopyrite. Drusy/vuggy areas, iron-stained.

88 MT 1703A Breccia, polymictic and superimposed crackle breccia. Polymictic breccia as described previously with fragmental and later fracture controlled chalcopyrite and pyrite mineralization in siderite and quartz gangue which extend through the lithic fragments and out into the breccia matrix.

88 MT 1704 Baked(?) siliceous siltstone/argillite, light buff-cream, massive. Crackled, 2+ generations, criss cross pattern showing offsets, fracture

fillings by quartz and siderite, scattered minute blebs of sulphides. Iron staining. A dendritic pattern extends out into rock matrix from fractures, visible on cut surface.

88 MT 1705 Argillite, medium to dark purplish grey, silty texture, massive.

88 MT 1705A Argillite, medium to dark purplish grey, silty texture, crackles filled with quartz, carbonate and siderite.

88 MT 1706 Argillaceous siltstone, light to medium grey, mottled. Crackled, filled by siderite and quartz, limonitic stain. Quartz segregations conspicuous.

TABLE 4
STEEL RUN ANOMALOUS VALUES

Sample	Fe%	Cu ppm	Co ppm	Ni ppm	As ppm	Au ppb
88-MT-1702	26.4	13500	3050 (0.24%)	610	3570 (0.27%)	296 (256)
1703	9.0	3310	320 (0.03%)	72	163 (0.02%)	42 (43)
1704		180				

Significance of Analyses:
Iron, copper and gold were known to be present in concentrations of economic significance. However, this appears to be the first report of significant cobalt content. The high Co values indicated by Direct Irradiation /INAA were confirmed by conventional Co assay. High As content was also confirmed by conventional assay.

The high Co values are not only of significance for the Steele Run occurrence but similar occurrences and past producers, such as Londonderry and East Mine, should also be checked for Co values.

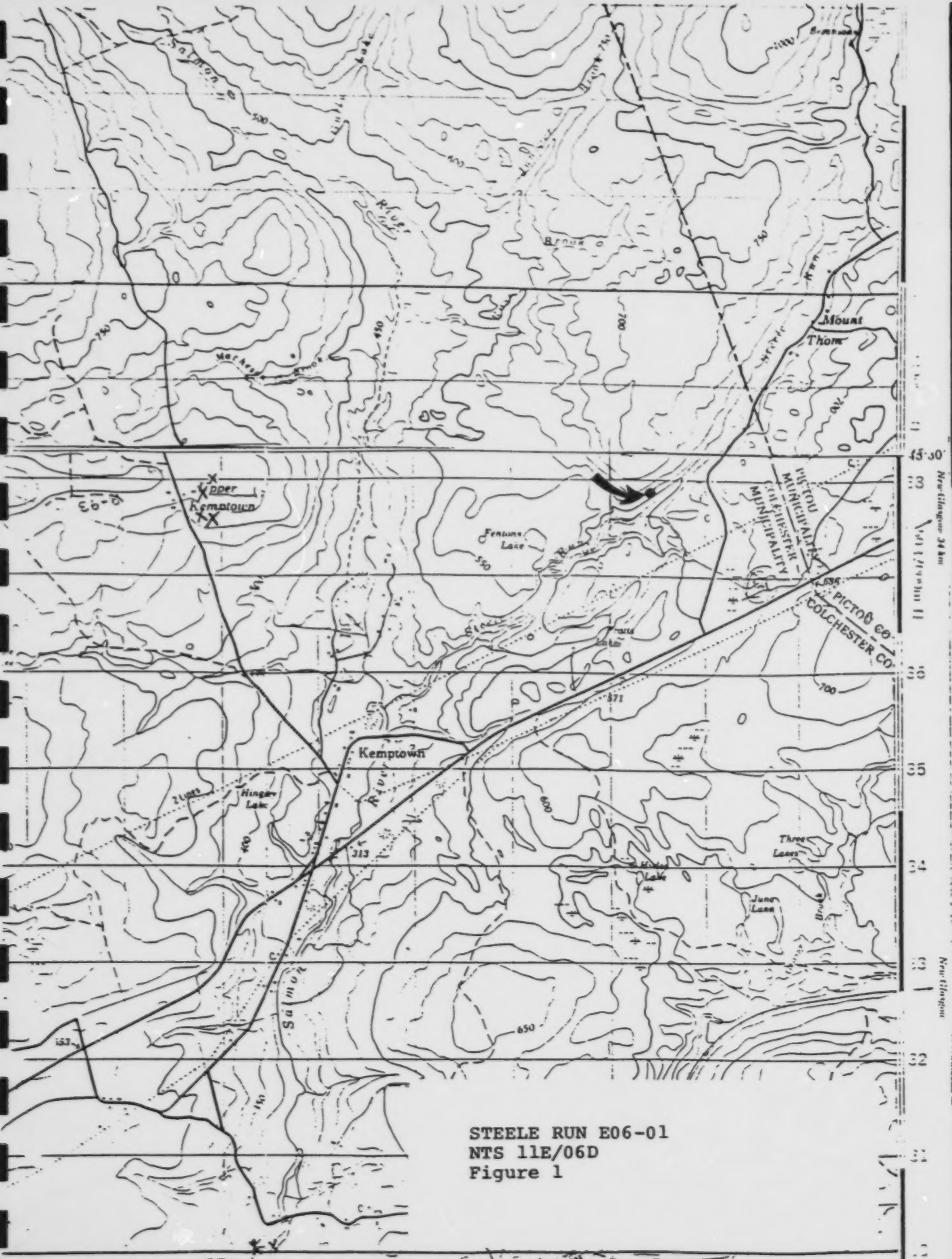
TABLE 3
STEELE RUN
DIAMOND DRILL HOLE ASSAYS

Drill	Hole#	Interval	Cu%	Au oz/t	Ag oz/t
1	(702)	56.1-61.0	0.32		
		61.0-61.2	0.98		
		66.0-66.2	0.05		
		66.2-70.8	0.29		
		70.8-75.0	0.24		
		75.0-75.5	0.76		
		75.5-78.0	0.03		
		78.0-81.0	0.31		
		239.0-239.8	0.07		
		239.8-245.0	0.2		
		245.0-248.5	0.04		
2	(358)	90.8-95.8	1.36		
		95.8-100.8	0.37		
		100.8-105.5	0.03		
		105.5-110.5	0.08		
		110.5-114.0	0.06		
		182.3-183.5	0.04		
3	(405)	260.5-264.5	Tr		
		264.5-270.0	0.08		
		270.0-275.0	0.13		
		275.0-280.0	0.07		
		280.0-282.7	Tr		
		282.7-284.5	1.8		
		284.5-287.0	Tr		
		187.0-290.0	Tr		
		290.0-295.0	Tr		
		295.0-300.0	Tr		
		300.0-304.0	Tr		
		304.0-306.0	Tr		
4	(166)	54.0-55.9	0.06		
		55.9-60.0	0.06		
		61.0-62.0	Tr		
		62.0-67.0	1.45		
		67.0-73.0	5		
		73.0-76.0	0.3		
		76.0-76.6	0.16		
		76.6-80.0	0.68		
		80.0-85.5	0.99		
		85.5-91.5	1.17		
		91.5-97.0	0.45		
		97.0-99.6	0.07		
		99.6-104.0	0.11		

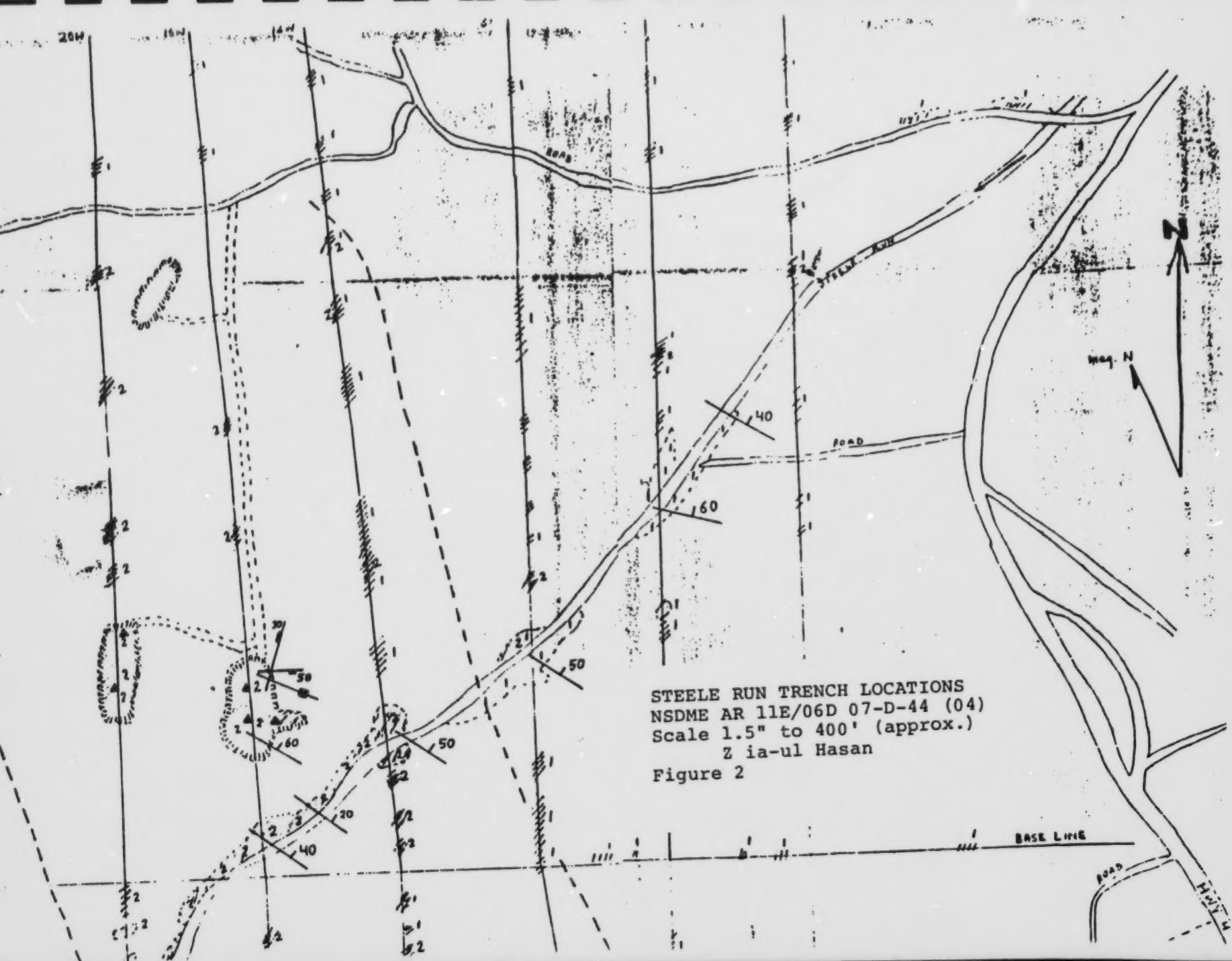
5	(251)	49.0-51.0	0.59	
		53.4-53.5	2.86	
		51.0-57.8	0.19	
		57.8-58.8	0.7	
		58.8-64.2	0.18	
		64.2-67.0	3.09	
7	(255)	243.0-246.0	0.14	
8	(174)	99.8-102.0	0.35	
		104.5-113.0	0.42	
		113.0-118.0	0.25	
		118.0-122.5	0.06	
		122.5-129.0	0.05	
		19.0-134.0	0.03	
		134.0-137.0	0.04	
		145.5-147.0	0.09	
9	(228)	60.5-65.0	2.47	
		65.0-67.0	4.23	
		67.0-71.0	0.93	
		71.0-76.0	0.49	
10	(528)	938	0.01	0.13% Zn
11	(133.5)	47.5-59.5	1.09	
		47.5-69.0	0.72	
		69.0-76.1	0.02	
		76.1-80.0	0.34	
		81.0-86.4	0.08	
		86.4-92.0	0.09	
		92.0-97.5	0.41	
		97.5-100.7	0.02	
		100.7-103.3	0.28	
		103.3-105.0	Tr	
		105.0-107.0	0.14	
		107.0-110.0	0.03	
12	(128)	58.0-60.5	0.63	
		60.5-65.0	0.05	
		65.0-68.0	0.29	
		68.0-72.0	0.11	
		72.0-76.0	0.24	
		76.0-80.9	0.06	
		99.7-104.0	0.02	
13	(207)	142.0-143.5	0.55	
15	(136)	23.5-28.5	Tr	
		60.0-63.0	0.03	
		63.0-65.0	0.02	
		65.0-66.8	0.13	
		78.1-79.2	0.46	
16	(155)	52.0-60.2	0.38	

		76.0-80.0	0.28	
		94.6-100	0.33	
		100.0-105.0	0.34	
		105.0-110.0	0.2	
		110.0-114.0	0.16	
		114.0-121.0	0.17	
17	(168)	38.0-40.2	0.45	Tr
		40.2-44.2	0.15	Tr
		46.3-46.8	1.67	0.02
		48.0-53.5	0.23	Tr
		57.0-60.0	1.34	0.01
		61.5-63.4	0.75	Tr
		65.7-72.0	0.76	Tr
		72.0-75.6	0.51	0.01
		75.6-80.0	0.4	0.01
		118.0-125.0	0.42	Tr
		125.0-129.0	0.16	
18	(192)	108.0-114.0	0.22	
		114.4-119.0	0.33	
		132.0-134.0	0.62	
		161.4-167.9	0.3	
19	(147)	50.0-55.0	0.74	
		55.0-60.0	0.96	
		60.0-65.0	0.01	
		77.9-81.0	0.57	
		103.5-108.0	0.1	
		108.0-111.0	0.37	
20	(118)	6.0-11.0	0.02	
		11.0-16.0	0.14	
		31.0-36.0	0.67	
		36.0-42.0	0.25	
		42.0-47.0	0.18	
		47.0-51.0	2.62	
		51.0-55.0	0.95	
21	(144)	16.0-20.0	0.12	
		20.0-25.0	0.02	
		43.0-47.6	0.21	
		55.0-60.0	Tr	
		60.0-65.0	0.17	
		65.0-69.7	0.05	
		69.7-75.0	0.02	
		75.0-80.0	0.56	
		80.0-85.0	0.06	
22	(148)	53.0-58.0	0.25	
		58.0-62.0	Tr	
		103.0-108.0	0.02	
		108.0-111.0	0.15	
23	(138)	18.0-22.0	0.39	
		22.0-26.0	0.22	

		30.0-36.0	0.01		
		38.0-43.4	0.4		
		43.4-45.0	2.6		
		61.0-66.0	0.7		
		66.0-70.0	0.96		
		70.0-75.0	0.45		
		75.0-80.0	0.48		
		80.0-85.0	Tr		
		85.0-90.0	0.02		
		90.0-95.0	0.03		
		95.0-100.0	0.48		
		100.0-105.0	0.17		
		105.0-110.0	0.07		
24	(181)	123.8-129.0	0.11		
		129.0-133.5	0.08		
		133.5-138.0	0.16		
		156.3-159.0	0.09		
		159.0-164.0	0.39		
27	(182)	43.8-47.5	0.17		
		49.6-55.0	0.53		
		55.0-61.0	0.11		
		61.0-66.0	0.47		
		66.0-70.0	0.85		
28	(182)	172.0-177.0	0.18		
29	(163)	84.0-89.0	0.06		
		89.0-94.0	0.09		
		94.0-99.0	0.27		
31	(224)	54.0-59.0	1.24		
		84.0-86.5	0.96		
		112.0-116.0	1.41		
49		37.0-39.0	1	0.015	0.08
		39.0-46.0	0.05	Tr	0.03
		46.0-48.4	0.58	0.01	0.05
		62.0-63.5	0.8	0.015	0.08
		63.5-65.0	0.08	Tr	0.04
		65.0-68.2	0.08	Tr	0.03
		254.0-264.0	0.03	Tr	0.02
		306.0-309.0	0.19	Tr	0.05
		339.8-345.0	0.41	Tr	0.09
		549.2-551.0	1.02	0.005	0.08
		551.0-556.0	0.18	Tr	0.04
		556.0-556.8	0.95	0.005	0.07
		607.0-609.0	0.015	Tr	0.03



STEELE RUN E06-01
NTS 11E/06D
Figure 1



STEELE RUN TRENCH LOCATIONS
NSDME AR 11E/06D 07-D-44 (04)
Scale 1.5" to 400' (approx.)
Z ia-ul Hasan
Figure 2

STEELE RUN DRILLHOLE LOCATIONS
NSDME AR 11E/06D 07-D-44 (09)
Figure 3

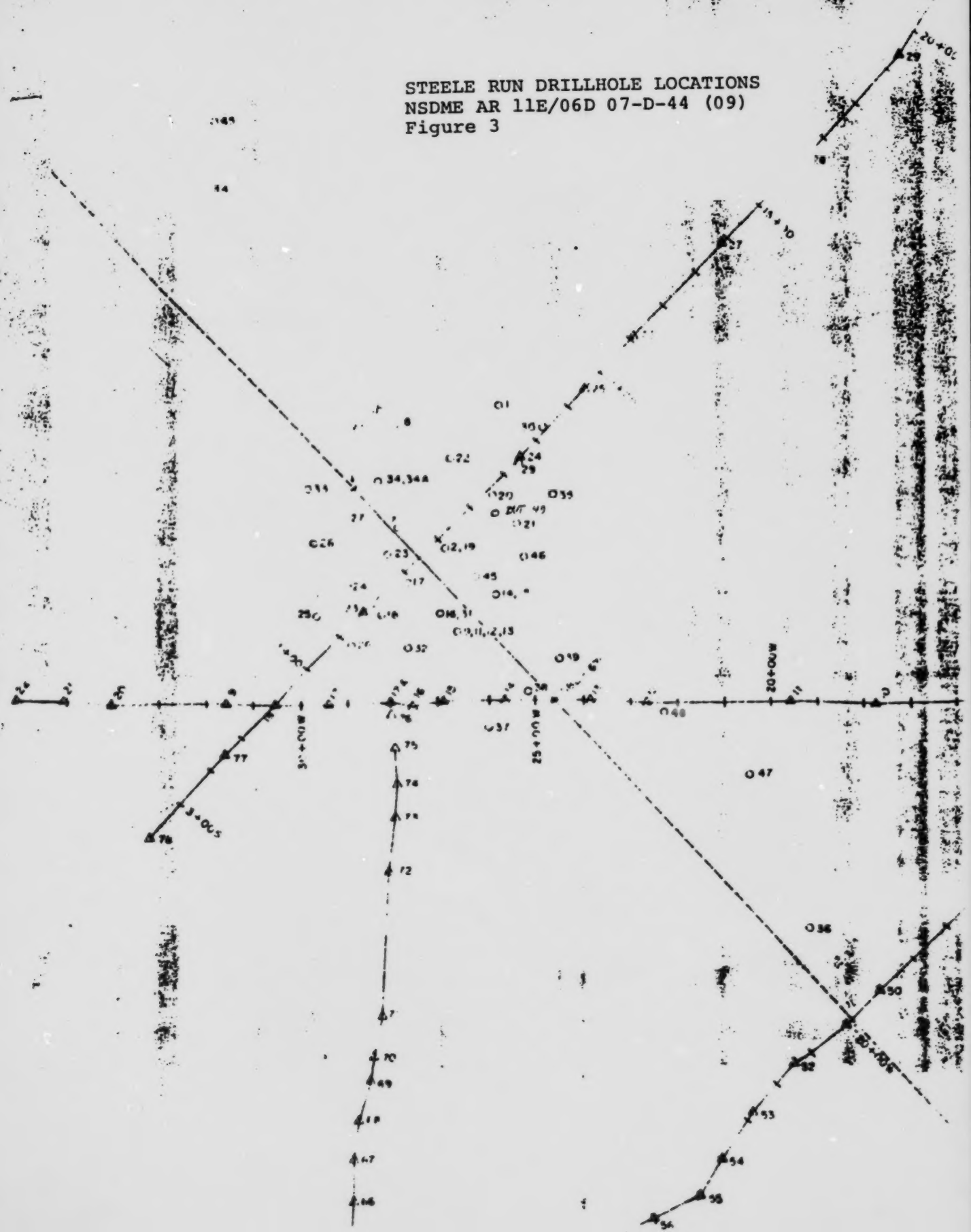


TABLE 2

STEELE RUN/MOUNT THON ANALYSES

STEELE RUN Au + 33																		
88-MT	NaX	Sc	Cr	FeX	Co	Ni	As	Br	Rb	Sr	Zr	Sb	Cs	Ba	La	Ce	Sm	Eu
1702	0.12	11	160	28.4	3050	810	<100	3570	6.7	110	<300	<2	<11	<2	<1	<2	<0.2	<0.2
1703	0.14	10	210	29.0	3120	<270	<100	103	6.7	110	<300	<2	<11	<2	<1	<2	<0.2	<0.2
1704	0.21	15	170	3.9	328	<270	<100	103	6.7	180	<300	<2	<11	<2	<1	<2	<0.2	<0.2
1705	0.72	18	200	35.2	3160	<270	<100	4.1	6.7	185	410	<2	<11	<2	<1	<2	<0.2	<0.2
1706	0.22	14	170	3.2	324	430	<100	0.5	6.7	150	240	<2	<11	<2	<1	<2	<0.2	<0.2

STEELE RUN ATOMIC ABSORPTION						
88-MT	Cu	Zn	Ag	Pb	Au	Hg
1702	13500	14	0.6	130		<50
1703	3310	19	<0.1			<50
1704	100	8	<0.1	<2		<50
1705	25	4	<0.1	<2		<50
1706	43	8	<0.1	<2		<50

STEELE RUN ASSAYS					
88-MT	CuX	PbX	ZnX	CeX	AuX
1702	1.2	<0.01	<0.01	0.24	0.27
1703	0.28	<0.01	<0.01	0.03	0.02
1704	0.01	<0.01	<0.01		
1705	<0.01	<0.01	<0.01		
1706	<0.01	<0.01	<0.01		

| | | |

SIX MILE BROOK

OCCURRENCE: **SIX MILE BROOK E10-03 (Copper, gold)**

LOCATION: **5048120 N 504860 E NTS 11E/10 B**
Located 300 m up the first major tributary entering Six Mile Brook from the south near its headwaters. The workings straddle this tributary 300 m above its junction with Six Mile Brook.

ACCESS:

Turn north off Highway 104 at Salt Springs Provincial Park and follow Six Mile Brook road for 5.4 km to the point where it crosses a main logging road about 0.5 km past Six Mile Brook settlement. Proceed for another 0.3 km and take a small access spur northwest (right) for 1.5 km to a former bridge site which crossed Six Mile Brook. A driveable track leads to the southwest (left) for 100 m to a shallow river crossing. At this point walk up the south (left) bank for 1.3 km to the first major tributary entering from the south (left). An old access road follows first one side of the brook and then the other, so it can be followed part way when it is on the south bank. Follow along the east side of the first major tributary for 300 m to the inclined and vertical shafts and shallow pit (Fig. 1). The two shafts are 10 m apart and straddle the tributary.

REFERENCES:

Donohoe, H. V., Jr. and Wallace, P. I., 1978. Geology Map of the Cobequid Highlands; NSDME Preliminary Map 78-1.

Donohoe, H. V., Jr., 1981. Mineral Occurrences in the Cobequid Highlands; *In* Mineral Resources Division, Report of Activities 1981, ed. K. A. Mills, NSDME Report 82-1, p. 79-112.

Donohoe, H. V., Jr. and Wallace, P. I., 1982. Geological Map of the Cobequid Highlands, Colchester, Cumberland and Pictou Counties, Nova Scotia; 4 sheets plus legend, NSDME Maps 82-06, -07, -08, -09, scale 1:50 000.

Murphy, J. B., Pe-Piper, G., Nance, D., Turner, D. and Piper, D. J. W., 1988. Preliminary Geological Map of the Eastern Cobequid Highlands; GSC Open File 1755, 2 sheets, scale 1:50 000.

NSDME ASSESSMENT REPORT 11E/10 B 13-M-26 (01) Copper, Six Mile Brook.
11E/10 C 13-M-20 (01) Copper, Painfield
11E/05 D CL-19 (06)

PREVIOUS WORK:

1890 Fletcher, brief description.

Date of shafts not known.

1952 Cameron, H. L., brief description.

1956 Kennco, shafts dewatered, mapped, sampled.

1963 Noranda, regional stream sediment geochemical survey.

WORKINGS:

Inclined shaft: @ -43° to SW; west side of creek, depth 12 m [110 m, bearing 110° to second shaft].

Vertical shaft: timbered, 2 m long, trending 170°, 9 m deep on east side of creek.

Pit: 10 m bearing 110° from shaft #2. Bedrock is not exposed; muck pile between shaft #2 and pit.

Ten m downstream from pit there is a widely scattered dump of vein quartz on the east side of the stream.

GEOLOGY:

Donohoe and Wallace (1982) mapped the country rocks around the Six Mile Brook occurrence as part of the Middle to Late Silurian Earltown Formation which contains tan to orange rhyolite, crystal tuff; tan to grey dacitic volcanic rocks; minor grey siltstone and wacke. Murphy et al. (1988) place the same unit in the Hadrynian Dalhousie Mountain Group.

PREVIOUS ASSAYS:

1956 Note: Garth DeMont suggests that the shaft described in NSDME 11E/05D CL-19 (06) could be the Six Mile Brook shaft. Old shaft inclined 45° to the west was dewatered and mucked out. There was chalcopyrite and bornite mineralization reported in the shaft over a length of 17.5 ft and a width of 2 ft.

DMB #1 Selected sample from dump of old gold showing gave a value of 4.47% copper (chemical analysis).

DMB #2 From mineralized vein on south wall of shaft (semi-quantitative analysis).

DMB #3 From assumed hanging wall, south wall of shaft, trace Cu, Mn, Ti, V, and Zr (semi-quantitative).

DMB #4 From assumed footwall, south wall of shaft, traces as for DMB #3, with a trace of Mo (semi-quantitative).

DMB #5 From the fault, west wall of drift, similar to DMB #4 (semi-quantitative).

DMB #7 6.5 ft from the shaft collar and on the south wall of the shaft over a width of 2 ft, 1.55% Cu, trace Au and Ag (semi-quantitative).

DMB #8 Channel sample, taken at 16 ft from the shaft collar and on the south wall of the shaft over a width of 3 feet, gave values of 1.55% Cu, with a trace of Au and Ag (chemical analysis).

RESULTS OF THE 1988 FIELD CHECK: (Northcote and Armitage)

Local Geology:

Bedrock in the vicinity of the mine workings is fine- to medium-grained diorite/granodiorite. Fine basaltic rocks in sharp but irregular contact with the diorite/granodiorite may represent dykes or large xenoliths. Small amounts of disseminated chalcopyrite are visible in the plutonic rock matrix.

Samples of mineralized quartz vein material were collected from the scattered dump, 10 m downstream from the pit. In addition, samples of country rock were collected in the vicinity of the mine workings and from bedrock exposures in Six Mile Brook.

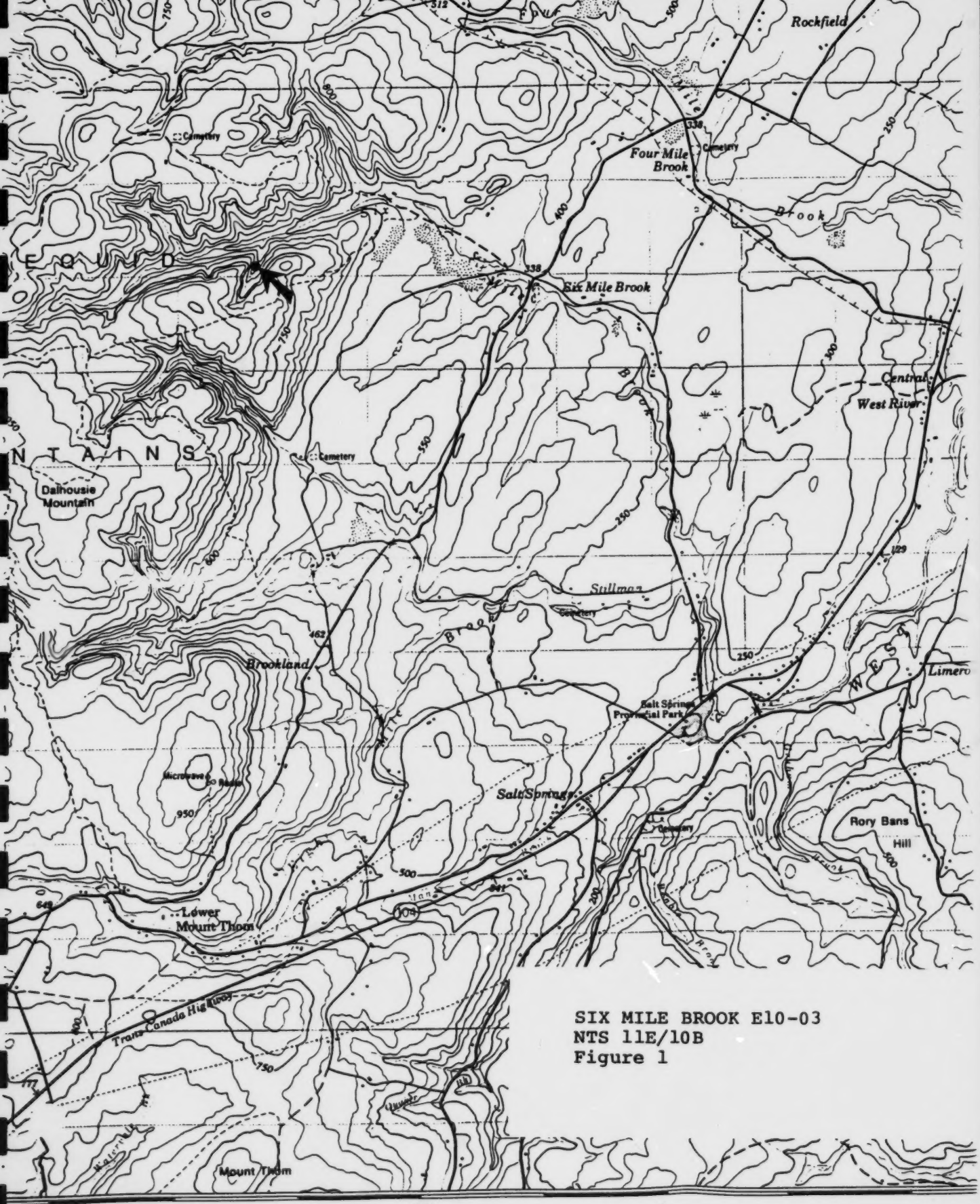
Samples collected for chemical analyses are described briefly in Table 1. Results of the analyses are listed in Table 2.

TABLE 1
SIX MILE BROOK SAMPLES

88 SXB 8501	Quartz from dump 10 m below pit. Weakly mineralized by sulphides.
88 SXB 8502	Quartz from dump 10 m below pit. Weakly mineralized by sulphides.
88 SXB 8503	Granodiorite/diorite, fine- to medium-grained.
88 SXB 8504	On Six Mile Brook, 300 m from the road. Basalt(?), massive and breccia. Crackled, filled with calcite veinlets, few disseminated chalcopyrite grains. Samples on the dump indicate 15 to 20 cm wide vein(s) sparsely mineralized by pyrite and chalcopyrite. Chloritic clots occur at the sides of the veins.

Results of Analyses:

Samples 8501 and 8502 give anomalous Cu values of 2267 and 1408 ppm; with Au values of 40 ppb and 37 ppb respectively.



SIX MILE BROOK E10-03
NTS 11E/10B
Figure 1

TABLE 2
SIX MILE BROOK ANALYSES

SIX MILE BROOK Au + 33 (ppm, except where indicated)

80-SBX	Na%	Sc	Cr	Fe%	Co	Ni	Zn	As	Se	Br	Rb	Sr	Cd	Sb	Ba	La
8501	0.04	1	348	0.8	<50	<220	<1000	5.1	<5	<2	9	<200	1	<2	<5	<1000	1.0	5
8502	0.28	4.4	178	1.5	<50	<220	<1000	1.4	<5	<2	2	<200	2	<2	<5	<1000	1.2	5
8503	1.0	11	158	3.6	120	<220	1200	1.9	<5	<2	13	<200	2	<2	<5	1000	0.4	5
8504	2.04	19	270	7.4	40	150	150	4.4	<5	<2	2	<200	2	<2	<5	100	1.9	5

SIX MILE BROOK ATOMIC ABSORPTION (ppm, except where indicated)

80-SBX	V	Cr	Mn	Fe%	Co	Ni	Cu	Zn	As	Se	Br	Rb	Sr	Mo	Ag	Au ppb
8501	15	287	373	1.2	4	4	2287	93	<5	<0.2	0.8	0.2	280	<1		40
8502	31	144	1051	1.0	3	3	1408	37	<5	<0.2	0.6	0.2	340	<1		37
8503	98	134	710	3.2	16	16	82	144	<5	<0.2	0.6	0.2	200	<1		8
8504	188	187	1881	8	35	116	111	128	5	<0.2	0.1	0.2	12	<1		8

[illegible]

CENTRAL NEW ANNAN[1]

OCCURRENCE: (1) CENTRAL NEW ANNAN E11-28 (Lead)
(2) CENTRAL NEW ANNAN E11-11 (Lead)

LOCATION: 5053410 N 475660 E NTS 11E/11C

ACCESS:
100 m north of bridge over Miller Brook at Central New Annan.

REFERENCES:
Ryan, R. J., 1986. Central New Annan, NSDME MOD Card.

NSDME ASSESSMENT REPORT 11E/11C 13-D-57
11E/11C 54-D-47

Shumway, G., 1957. Sedimentary Copper, Tatamagouche Area, N. S.; M.I.T. Unpublished M.Sc. Thesis, 31 p.

PREVIOUS WORK:
1963 Lead discovery by Noranda with follow-up to lead showing by soil geochemical sampling with soil lead values up to 190 ppm in proximity to the showing.

1977 Continuing follow-up.

GEOLOGY: (Ryan, 1986)
Host is equivalent to other Boss Mountain mineralized sandstones. Grey subarkosic sandstones overlie the pre-Carboniferous rocks of the Cobequid massif. The stratigraphic horizon is about the same level as the Donaldson Mill Brook copper occurrence.

Mineralization:
Pyrite with traces of malachite are found as pebbles in the stream bed. Mineralization may occur within the shales and therefore would be easily passed over as the shales rarely outcrop.

RESULTS OF 1988 FIELD CHECK: (Northcote and Armitage).

Occurrence E11-28:
In sandstone bedding planes there are thin lensoids (3 m long by 20 cm high) of iron-staining and bleaching associated with carbonaceous material. No sulphides were noted.

Occurrence E11-11:
Pyrite associated with carbonaceous fragments in sandstone. These samples were analyzed at Bondar Clegg Laboratory, Ottawa, by a combination of Neutron Activation/INAA, Atomic Absorption, X-Ray Fluorescence analyses and conventional assay for a total of 38 elements. Descriptions of the samples are given in Table 1 and results of the analyses are listed on Table 2.

1 From R. J. Ryan, 1986, Central New Annan, NSDME MOD.

TABLE 1
CENTRAL NEW ANNAN SAMPLES

E11-28	
88 CNA 2001	Chip samples of iron-stained lensoids in subarkosic sandstone.
88 CNA 2002	Chip samples of iron-stained lensoids in subarkosic sandstone.
E11-11	
88 CNA 2101	Subarkosic sandstone containing pyrite associated with carbonaceous fragments.

Results of the Analyses:

The iron-stained lensoids in sandstone bedding at E11-28 gave highly anomalous lead values of >3000 ppm. Other metal values are generally low. Barium is weakly anomalous at 1300 ppm. The pyritic sample taken at E11-11 is weakly anomalous in lead at 668 ppm.

CENTRAL NEW ANNAN E11-11 and 28
NTS 11E/11C
Figure 1

TABLE 2
CENTRAL NEW AWAWA ANALYSES

| CENTRAL NEW AWAWA | Au + 33 (ppm unless otherwise indicated) | | |

BYERS BROOK
(WEST NEW ANNAN)

OCCURRENCE: (a) BYERS BROOK (WEST NEW ANNAN) E11-17 (Pyritic shear zone)
(b) BYERS LAKE ROAD E11-16 (Minor pyrite)

LOCATION: (a) 5050800 N 469900 E NTS 11E/11B
(b) 5050530 N 469550 E
(MOD card E11-17 locaton misplaced by approximately 1 km).

ACCESS:

(a) Drive 0.7 km southwest along Byers Lake Road from Warwick junction. A small watercourse leads southeasterly into Byers Brook. There is an excavation in the watercourse 50 m below the road and 20 m above the junction with Byers Brook.

(b) Drive 1.2 km southwest along Byers Brook Road from Warwick junction. Bedded, iron stain spotted volcaniclastic sediments outcrop on the west side of the road.

REFERENCES:

Donohoe, H. V., Jr. and Wallace, P. I., 1978. Geology Map of the Cobequid Highlands; NSDME Preliminary Map 78-1.

Donohoe, H. V., Jr., 1981. Mineral Occurrences in the Cobequid Highlands; *In* Mineral Resources Division, Report of Activities 1981, ed. K. A. Mills, NSDME Report 82-1, p. 79-112.

Donohoe, H. V., Jr. and Wallace, P. I., 1982. Geological Map of the Cobequid Highlands, Colchester, Cumberland and Pictou Counties, Nova Scotia; 4 sheets plus legend, NSDME Maps 82-06, -07, -08, -09, scale 1:50 000.

GSC Annual Report 1903. p. 171A.

Murphy, J. B., Pe-Piper, G., Nance, D., Turner, D. and Piper, D. J. W., 1988. Preliminary Geological Map of the Eastern Cobequid Highlands; GSC Open File 1755, 2 sheets, scale 1:50 000.

NSDME ASSESSMENT REPORT 11E/11B 25-D-51 (00).

PREVIOUS WORK:

(a) 1903 The shear gouge zone was excavated for a length of about 10 (?) m up the tributary. Erosion and sloughing makes the excavation inconspicuous. A large pile of material, probably a dump, lies on the northeast side of the tributary a few metres above Byers Brook (Fig. 2).

(b) No previous work.

RESULTS OF 1988 FIELD CHECK: (Northcote and Armitage)

Geology:

(a) A shear zone 7.3 m wide (found by Northcote and Armitage to be 1 km from its MOD plotted position) strikes north-south to 170° and cuts rhyolitic tuff of the Byers Brook Formation (DCB) (Donohoe and Wallace, 1982). The well indurated shear/gouge zone contains disseminated pyrite and pyrite in shears and fractures.

(b) Thinly bedded volcaniclastic sediments, 112°/84° N, with some interbedded amygdaloidal (weathered out to vesicular) flows. Scattered limonitic stain and weathered pits occur in bedding planes.

Both zones were sampled for chemical analyses at Bondar Clegg Laboratory, Ottawa, by a combination of Direct Irradiation/INAA and Atomic Absorption analyses for 37 elements. A brief description of the samples is given in Table 1 and the results of the analyses in Table 2.

TABLE 1
BYERS BROOK SAMPLE DESCRIPTIONS

(a) Byers Brook E11-17 Samples:

88 BL 1901 Pyritized rhyolite gouge from centre of zone. Light blue-grey, clay-like, fairly well consolidated. Disseminated pyrite crystals.

88 BL 1902 Pyritized rhyolite gouge from southwest side of zone. Light blue-grey, clay-like, fairly well consolidated. Disseminated pyrite crystals.

88 BL 1903 Pyritized rhyolite gouge from the northeast side of zone. Light blue-grey, clay-like, fairly well consolidated. Disseminated pyrite crystals.

88 BL 1904 Rhyolitic tuff wallrock.

(b) Byers Lake Road E11-16 Samples:

88 BL 2801 Weakly iron-stained and stained pitted rhyolite and wacke.

88 BL 2802 Weakly iron-stained and stained pitted rhyolite and wacke.

Table 3 is a summary of weakly anomalous values as indicated by the analyses on Table 2.

TABLE 3
BYERS BROOK SUMMARY OF WEAKLY ANOMALOUS VALUES

(a) Byers Brook E11-17 Samples:

	Fe%	Cr ppm	Zn ppm	As ppm	Au ppb	Pb ppm
88 BL 1901	14	220	200	--	--	--
			142			
88 BL 1902	12	--	180	--	--	--
			192			
88 BL 1903	13	--	220	102	--	--
			173			
88 BL 1904	1.7	--	210	--	5	48
			145		19	

(b) Byers Lake Road E11-16 Samples:

88 BL 2801	2.5	--	--	--	--	28
88 BL 2802	2.5	--	--	--	--	66

Results of the Analyses:

The analyses indicate nothing of economic or metallogenic significance other than pyrite at E11-17.

BYERS BROOK AREA E11-16 and 17
NTS 11E/11B
Figure 1

TABLE 2
BYERS BROOK AND BYERS LAKE ROAD ANALYSES

BYERS BROOK Au + 33 (ppm, except where indicated)

| 88-BL | Na% | | |

SWAN BROOK
(EAST WALLACE BROOK)

OCCURRENCE: SWAN BROOK E11-29 (Pyrite, lead, (molybdenum))

LOCATION: 5050850 N 462010 E NTS 11E/11B

ACCESS:

From Highway 246 drive up the east branch Swan Brook access road for 1.8 km to point where road crosses to southwest side of the brook. This is the approximate position where a copper occurrence was reported by Donohoe and Wallace (1982). Walk up the brook a few metres to a pyritic zone.

REFERENCES:

Donohoe, H. V., Jr. and Wallace, P. I., 1978. Geology Map of the Cobequid Highlands; NSDME Preliminary Map 78-1.

Donohoe, H. V., Jr., 1981. Mineral Occurrences in the Cobequid Highlands; *In* Mineral Resources Division, Report of Activities 1981, ed. K. A. Mills, NSDME Report 82-1, p. 79-112.

Donohoe, H. V., Jr. and Wallace, P. I., 1982. Geological Map of the Cobequid Highlands, Colchester, Cumberland and Pictou Counties, Nova Scotia; 4 sheets plus legend, NSDME Maps 82-06, -07, -08, -09, scale 1:50 000.

Murphy, J. B., Pe-Piper, G., Nance, D., Turner, D. and Piper, D. J. W., 1988. Preliminary Geological Map of the Eastern Cobequid Highlands; GSC Open File 1755, 2 sheets, scale 1:50 000.

PREVIOUS WORK:

Reported by Donohoe and Wallace (1982) as a chalcopyrite showing; described as disseminated pyrite and chalcopyrite parallel to flow layering.

GEOLOGY: (Donohoe and Wallace, 1982; Murphy et al., 1988)

The pyritic zone is in the Fountain Lake Group, Byers Brook Formation (DC_B) which consists of tan-orange to green rhyolitic ignimbrites and lava flows; crystal tuffs, minor green to grey siltstone and volcanic wacke (Donohoe and Wallace, 1982).

RESULTS OF 1988 FIELD CHECK: (Northcote and Armitage)

A brief examination of this occurrence was made in order to collect samples for metal analyses. A short distance up Swan Brook, above the point where the road crosses to the southwest side of the brook, there are abundantly (>5%) disseminated sulphides in felsic volcanic rocks.

Mineralization decreases approximately 100 m uptstream above the start of the pyritic zone. Although disseminated pyrite is still present it is in less significant amounts. Allan Armitage located and sampled an outcrop of pyritic granite(?) about 150 m downstream below the road crossing.

Table 1 is a brief lithologic description of 4 samples taken from the area of the pyritic zones. Table 2 lists the results of a combination of Direct Irradiation/INAA and Atomic Absorption analyses done at Bondar Clegg Laboratory, Ottawa.

TABLE 1
SWAN BROOK SAMPLES

88 SB 2701 Felsic volcanic rock; abundantly disseminated pyrite.

88 SB 2702 Felsic volcanic rock; darker colour, chloritic, disseminated pyrite.

88 SB 2703 Felsic volcanic rock; darker colour, chloritic, siliceous, quartz eyes, disseminated pyrite.

88 SB 2704 Granite(?); minor disseminated pyrite.

Significance:

No copper mineralization (chalcopyrite) was observed in the samples or indicated by the analyses. However, Table 2 shows a highly anomalous Pb value of 2310 ppm for sample 88-SB-2701. Zn values are slightly anomalous at 290 (352) and 360 (421) ppm in samples 88-SB-2701 and 2702 respectively. All samples have high Zr values ranging from 1900 to 3400 ppm. Sample 88-SB-2704 taken from granite(?) below the road crossing is weakly anomalous in Mo at 19 ppm.

SWAN BROOK E11-29
NTS 11E/11B
Figure 1

TABLE 2
SWAN BROOK ANALYSES

SWAN BROOK Au + 33 (ppm unless otherwise indicated)

88-58	NaX	Sc	Cr	FeX	Co	Ni	Zn	Mn	Sn	Sr	Rb	Zr	Mo	Ag	Cd	[illegible]	[illegible]
2701	0.12	1	100	3.4	<5	<20	2200	15	[illegible]	<2	370	3400	[illegible]	<2	<5	<100	[illegible]
2702	0.37	3.4	130	3.0	<5	<20	3800	17	[illegible]	<2	2200	20000	4	<2	<5	<100	[illegible]
2703	0.08	0.6	130	3.4	<5	<20	170	11	[illegible]	<2	330	3200	[illegible]	<2	<5	<100	[illegible]
2704	0.02	0.4	220	2.2	<5	<20	110	9.3	<5	<2	250	1900	10	<2	<5	<100	[illegible]

SWAN BROOK ATOMIC ABSORPTION (ppm unless otherwise indicated)

88-58	V	Cu	Zn	Ag	Pb	Au ppb
2701	5	68	352	<0.1	2310	<5
2702	31	27	421	<0.1	78	<5
2703	6	8	177	<0.1	82	<5
2704	0	11	100	<0.1	31	<5

[illegible]

WILLIAMSDALE-FARMINGTON

OCCURRENCE: WILLIAMSDALE-FARMINGTON E12-01 (Gold, arsenic, silver)

LOCATION: 5048950 N 4030100 E NTS 11E/12 B

ACCESS:

The occurrence is on a small tributary leading into Arsenic Brook from the southeast (Fig. 1). Drive 3.75 km east from Collingwood Corners to Arsenic Brook at Williamsdale. There are access roads on both sides of Arsenic Brook which lead to the property. Follow Farmington road on the west side of Arsenic Brook south for 0.9 km. An access road leads south (left) 107 m where it crosses Arsenic Brook. Continue along this old access road for an additional 165 m to a small tributary which enters Arsenic Brook from the southeast. Follow the small tributary for 96 m to the shaft at the minesite. An adit is located in the southwest bank 154 m 154 m farther upstream (Fig. 2).

A second access road (Stevens Road) which leads along the east side of Arsenic Brook crosses the small tributary between the shaft and the adit (Fig. 2).

REFERENCES:

Donohoe, H. V., Jr. and Wallace, P. I., 1978. Geology Map of the Cobequid Highlands; NSDME Preliminary Map 78-1.

Donohoe, H. V., Jr., 1981. Mineral Occurrences in the Cobequid Highlands; *In* Mineral Resources Division, Report of Activities 1981, ed. K. A. Mills, NSDME Report 82-1, p. 79-112.

Donohoe, H. V., Jr. and Wallace, P. I., 1982. Geological Map of the Cobequid Highlands, Colchester, Cumberland and Pictou Counties, Nova Scotia; 4 sheets plus legend, NSDME Maps 82-06, -07, -08, -09, scale 1:50 000.

Murphy, J. B., Pe-Piper, G., Nance, D., Turner, D. and Piper, D. J. W., 1988. Preliminary Geological Map of the Eastern Cobequid Highlands; GSC Open File 1755, 2 sheets, scale 1:50 000.

NSDME ASSESSMENT REPORT
11E/12 B 04-E-55 (00)
11E/12 B 21-E-55 (00, 01, 02)
85-020
86-038
87-018 Release date February, 1989.
87-016 Release date March, 1989.
87-133 Release date August, 1989.

Ryan, R. J., 1986. Mineral Occurrence Data Card E12-1.

REGIONAL GEOLOGY:

Donohoe and Wallace (1982) place the Farmington Occurrence in the Silurian Wilson Brook Formation which consists of siltstone, shale, minor wacke and tuff at the base; grey siltstone and quartz wacke. These rocks form a pendant in DCg; hornblende (biotite) monzogranite to alkali feldspar granite, and hornblende (pyroxene) diorite. To the north this unit is in fault contact with Late Carboniferous Parrsboro Formation (LC_{PP}) quartz and lithic wacke, siltstone, shale, conglomerate and arenite.

PROPERTY GEOLOGY:

Reference should be made to NSDME ARs 87-018, 046 and 133 when these reports are released. Briefly, without using information from confidential reports, the rocks in the vicinity of the occurrence are metasediments (quartzite, quartz wacke, siltstone and shale) and some rhyolite to andesite is reported. This assemblage is locally pyritic and is cut by small bodies of felsite and diorite.

At the shaft the rocks have been shattered and filled with steep west dipping irregular quartz veining (0.3 m to 2.0 m wide) containing pods of massive aresenopyrite and pyrite (to 15 cm thick) carrying gold and lesser silver values. At the adit there is an irregular sulphide-bearing quartz stringer system said to be distinct from that at the shaft (NSDME AR 11E/12 B 21-E-55 (01)).

PREVIOUS WORK:

1906 Discovery

1923-1930 (Hurst, 1927; Messervey, 1931) Nova Scotia Arsenic Mining and Prospecting Company. A shaft 125 ft deep with 70 ft drift leading south from 75 ft level was already in place (since 1910?). An adit, 600 ft east of shaft, was driven 60 ft into the west bank of the stream.

1927 (Reported in NSDME AR 11E/12 B 21-E-55 (01)) Drill hole, A.E. Gayton, between brook and Farmington Road at a point 200 m north of shaft gave "drillings" said to assay $27 in gold (@ $20 / oz) or 1.35 oz/ton Au.

1929 Solid arsenopyrite gave values of $2/ton Au, and about 40% As.

1931 NSDME AR 11E/12 B 04-E-55 (00) Messervey Samples 1931.

Samples	Location	Au	As
#1	Tunnel (inner)	nil	not determined (too low)
#2	Lower pit	$0.40	18.3%
#3	Upper pit	nil	16.1%
#4	Tunnel	$0.80	not determined (too low)

1934 NSDME AR 11E/12 B 21-E-55 (00) I. R. Blenkorn and W. G. Hamilton.

Samples	Location	Au oz/t
#1	Otcp in stream bank 770 yds from shaft	nil
#2	Channel sample, face of adit	nil
#3	Test pit east of shaft, fine diss sulph	nil
#4	Shaft, iron pyrite	0.02
#5	Shaft, massive arsenopyrite	0.56

1982 NSDME AR 11E/12 B 21-E-55 (01) U.S. Borax (Burton).
Stream sediment sampling Cu, Pb, Zn, Ag and As.

1983 NSDME AR 11E/12 B 21-E-55 (02) U.S. Borax (Burton).
Diamond-drill program: 3 holes were drilled in the vicinity of the old workings with no significant mineralization encountered. There is reference to an old adit on Farmington Road.

1985 NSDME AR 85-020 M. P. Cullen.
Magnetometer survey and prospecting.

1986 NSDME AR 86-038 M. P. Cullen.
Rock geochemistry (1985).

1987 NSDME AR 87-018 Seabright Resources Inc.
(Release February, 1989).

NSDME AR 87-046 Seabright Resources Inc.
(Release March, 1989).

NSDME AR 87-133 Seabright Resources Inc.
(Release August 1989).

RESULTS OF FIELD CHECK: (Northcote and Armitage)

There is excellent information in assessment reports to be released during 1989.

Seven samples representing selected massive sulphide mineralization and wall rocks were analyzed for 37 elements at Bondar Clegg Laboratory, Ottawa. Analyses were done by a combination of Direct Irradiation/INAA Au + 33, Atomic Absorption and conventional assay.

It is recommended that NSDME do further work on this property by pulling together data from soon-to-be-released assessment reports with petrographic analyses of polished thin sections. Table 1 gives a brief description of samples sent for analyses and Table 2 gives the results of these analyses.

TABLE 1
WILLIAMSDALE/FARMINGTON SAMPLES

Arsenic Brook:	Location is 700 m up Farmington Road from Williamsdale, then 42 m to brook, bearing 100°.
88 WD 2401	Pyritic metasediment (siltstone) extending 40 m along Arsenic Brook. Chip samples in 1 m^2 area.
88 WD 2402	Felsite, iron-stained, light brown. Chip samples in 1 m^2 area.
88 WD 2403	Diabase dyke. Chip samples in 1 m^2 area.
88 WD 2404	Mafic-rich rock, disseminated pyrite. Chip samples in 1 m^2 area.
Mine Area:	
88 WD 2405	Quartz veining with massive sulphide mineralization from dump at shaft. Random chip samples.
88 WD 2406	Massive sulphides, from dump at shaft. Selected samples which are not representative of grade.
88 WD 2407	Quartzite with minor sulphide mineralization, from adit. Random chip samples.

Results of Analyses:

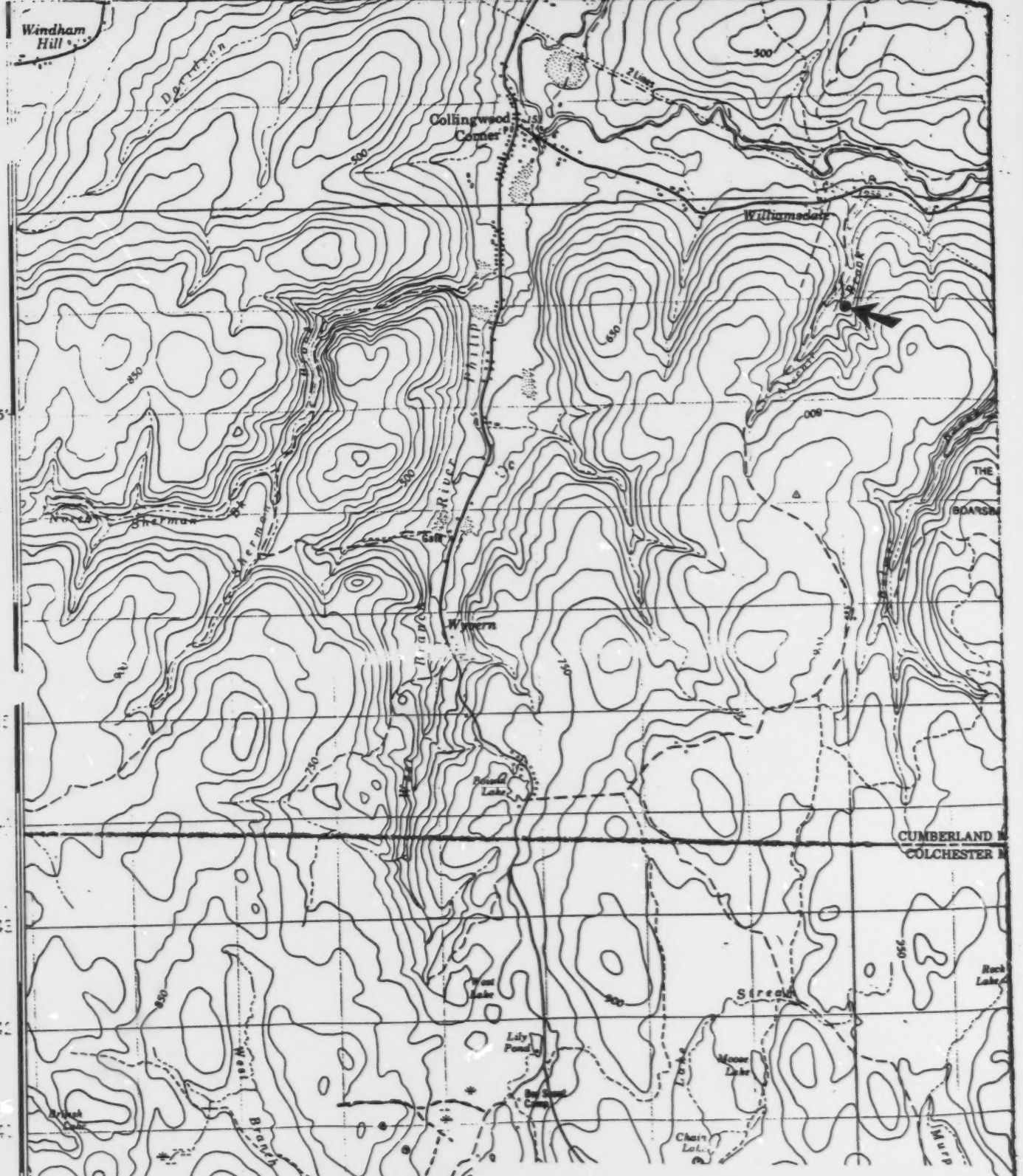
TABLE 3
WILLIAMSDALE/FARMINGTON ANOMALOUS VALUES

Sample	Fe%	Cr	As	Mo	Ag	Au	Pb
2405	--	280	5250	--	--	--	--
2406	31	--	9000	30	28 19.9 [0.57]	23500 16374 [0.548]	1016 (0.13%)
2407	--	290	1480	--	--	--	--

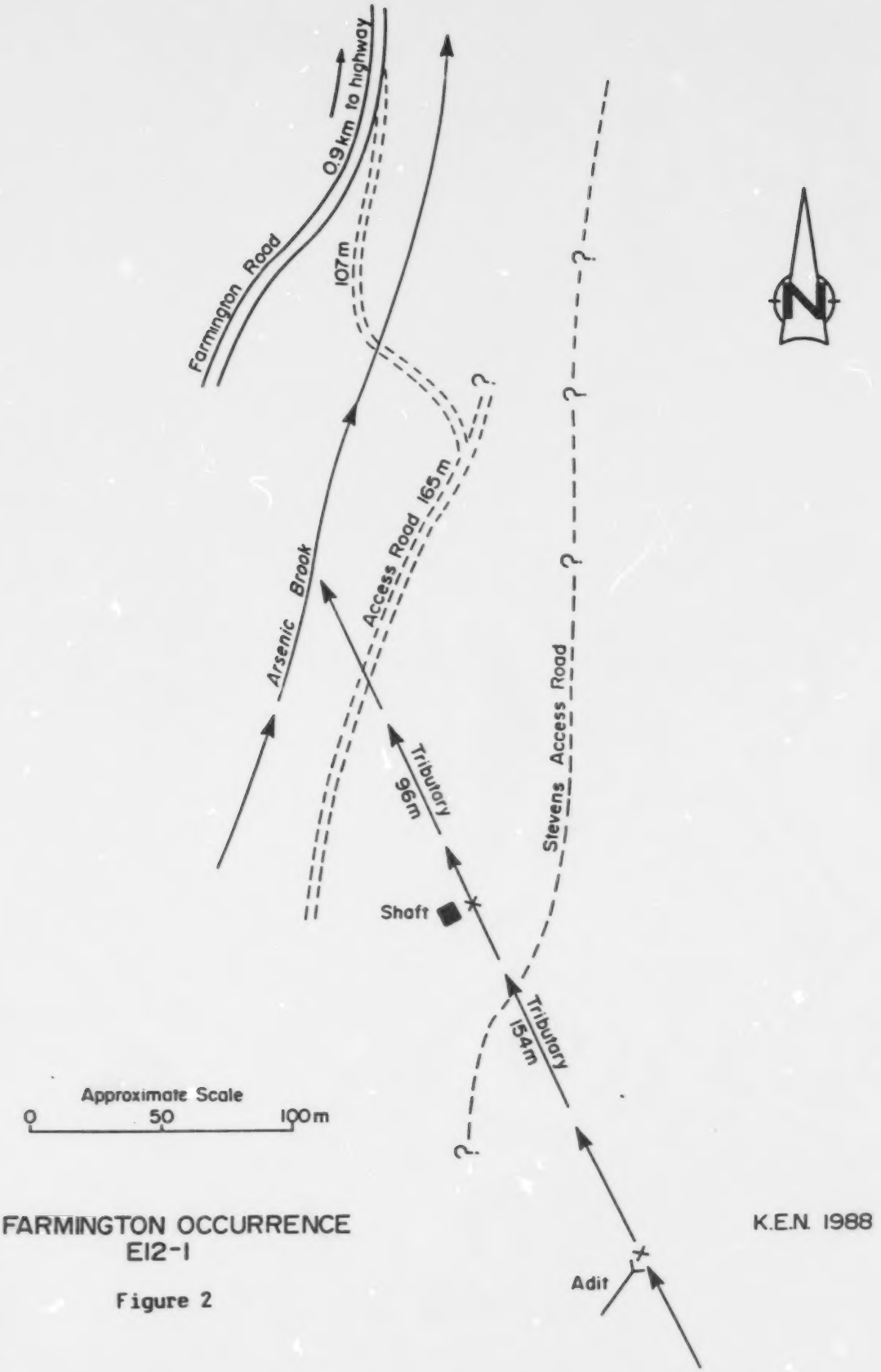
Significance:

Au, Ag, Pb, and As are of economic and metallogenic significance, with the As content possibly detrimental. In addition Sc, Cr, Mo, Sb are slightly anomalous in some samples and may be of some metallogenic significance.

This property requires complete data compilation.



WILLIAMSDALE/FARMINGTON E12-01
NTS 11E/12B
Figure 1



FARMINGTON OCCURRENCE
E12-1

Figure 2

K.E.N. 1988

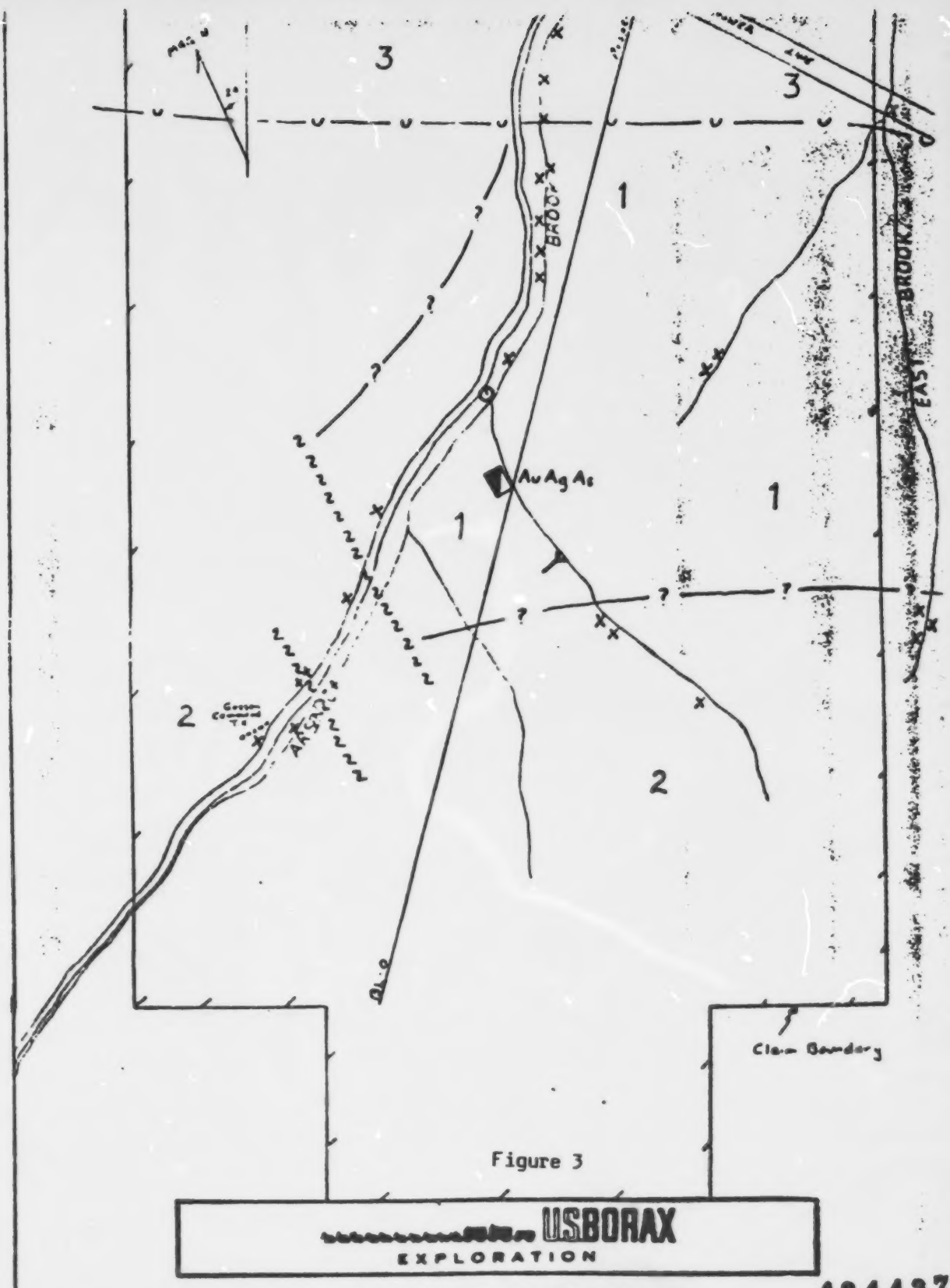


Figure 3

USBORAX
EXPLORATION

FARMINGTON PROPERTY

434437

X OUTCROP
SHAFT
ADIT
—?— GEOLOGIC CONTACT (APPROX.)
—U— UNCONFORMITY
~~~~ FAULT (ASSUMED)
⊙ DRILL HOLE
3 CARBONIFEROUS SEDIMENTS
2 WYMERN PLUTON (DEVONIAN)
1 SILURIAN VOLCANOCLASTICS

1 cm = 100 m

DATE: JUNE 1982
~~~~

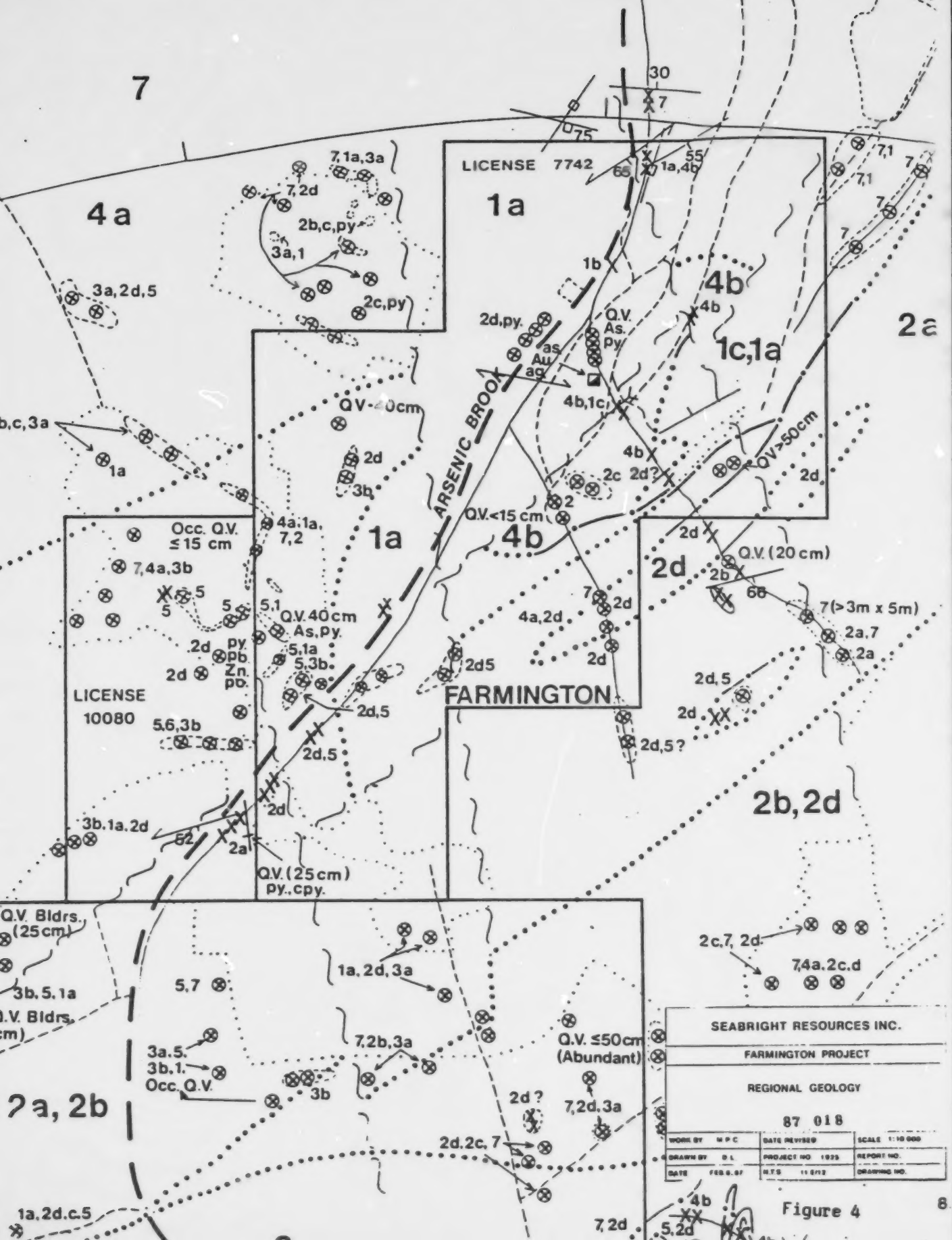

LICENSE 7742
LICENSE 10080
FARMINGTON
ARSENIC BROOK
7
4a
1a
4b
1c,1a
2d
2b,2d
2a, 2b
Occ. Q.V. ≤ 15 cm
Q.V. 40 cm As, py
Q.V. (20 cm)
Q.V. (25 cm) py., cpy.
Q.V. Bldrs. (25 cm)
Q.V. ≤50cm (Abundant)
Q.V.<15 cm
Q.V>50cm
7(>3m x 5m)
SEABRIGHT RESOURCES INC.
FARMINGTON PROJECT
REGIONAL GEOLOGY
87 018

Figure 4

FARMINGTON GEOLOGICAL LEGEND

CARBONIFEROUS

RIVERSDALE GROUP

7 — BOSS POINT FORMATION: RED POLYMICTIC CONGLOMERATE AND SANDSTONE.

DEVONO-CARBONIFEROUS

6 — MAFIC DIKES: SUBOPHITIC TO DIABASIC.

5 — FARMINGTON INTRUSION: PLAGIOCLASE-PHYRIC ANDESITIC STOCK; COMMONLY APHANITIC AND/OR PYRITIC.

4a 4b — GILBERT MOUNTAIN PLUTON: ORANGE HORNBLENDE-BIOTITE GRANITE AND SYENO GRANITE (b) APHANITIC ORANGE FELSITE WITH DISSEMINATED PYRITE; LOCALLY QUARTZ PHYRIC.

3a 3b — WYVERN PLUTON: (a) GREY GREEN HORNBLENDE-BIOTITE GRANITOID. (b) DARK GREY HORNBLENDE-BIOTITE DIORITE.

FOUNTAIN LAKE GROUP

2d — ANDESITE: DIKES, FLOWS AND ASSOCIATED PYROCLASTICS.

2c — RHYOLITE: RED TO TAN, GENERALLY MASSIVE; LOCALLY FLOW LAYERED AND/OR QUARTZ-FELDSPAR PHYRIC.

2b — FELSIC AND INTERMEDIATE PYROCLASTICS: GREY GREEN TUFF, ASH, LAPILLI TUFF AND LITHIC WACKE; TYPICALLY WATERLAIN.

2a — FELSIC PYROCLASTICS: PURPLE TUFF, TUFF BRECCIA, AGGLOMERATE AND WACKE; LOCALLY WITH SELECTIVE PYROPHYLLITIC ALTERATION OF LITHOCLASTS.

SILURIAN

WILSON BROOK FORMATION

1c — BLEACHED ORTHOQUARTZITE: GREY TO WHITE, COMMONLY CROSS-LAMINATED.

1b — TRANSITION SEQUENCE: THINLY INTERBEDDED, CLEAVED BLACK SHALE AND DARK GREY SILTSTONE; LOCALLY GRAPHITIC AND PYRITIC.

1a — GREY SILTSTONE SEQUENCE: INTERBEDDED CLEAVED GREY SILTSTONE, SHALE AND QUARTZ WACKE.

FIGURE 2

TABLE 2
WILLIAMSDALE (FARMINGTON) ANALYSES

WILLIAMSDALE (FARMINGTON) Au + 33

| 88-HD | Mo% | Sc | Cr | Ti% | | |

DAVIDSON BROOK

OCCURRENCE: **DAVIDSON BROOK H08-06 (No significant mineralization was observed)**

LOCATION: **5032330 N 396920 E NTS 21H/08C**

ACCESS:

From east end of cross roads at MacAloneys Lake, drive north for 1.1 km to Ian MacLean property where a bush access road leads straight up the hill, passing under the power line at 0.5 km and crossing Davidson Brook at an additional 0.4 km for a total of 0.9 km (Fig. 1).

REFERENCES:

Donohoe, H. V., Jr. and Wallace, P. I., 1978. Geology Map of the Cobequid Highlands; NSDME Preliminary Map 78-1.

Donohoe, H. V., Jr., 1981. Mineral Occurrences in the Cobequid Highlands; *In* Mineral Resources Division, Report of Activities 1981, ed. K. A. Mills, NSDME Report 82-1, p. 79-112.

Donohoe, H. V., Jr. and Wallace, P. I., 1982. Geological Map of the Cobequid Highlands, Colchester, Cumberland and Pictou Counties, Nova Scotia; 4 sheets plus legend, NSDME Maps 82-06, -07, -09, scale 1:50 000.

PREVIOUS WORK:

1960 Dome Exploration reported traces of chalcopyrite or malachite in andesite along Davidson Brook (AR 21H/08C 27-E-25 (01)).

1970 Merril Island Mining reported manganese or hematite coated fractures in granite and felsite porphyry and a manganese-barite showing is indicated in a trench which corresponds to an SP, EM and soil geochemical anomaly (AR 21H/08C 27-E-25 (04)).

GEOLOGY: (Donohoe and Wallace, 1982)

The area of the "occurrences" is underlain by the Middle Devonian Fountain Lake Group (DC_{FLr}) (Donohoe and Wallace, 1982) which comprises tan to orange rhyolitic lava flows and ignimbrites; red, grey siltstone, volcanic wacke, tuff and agglomerate. The Davidson Brook Pluton (DCd), which intrudes the Fountain Lake Group, is dark grey to pale tan hornblende (pyroxene) diorite (Donohoe and Wallace, 1982).

RESULTS OF 1988 FIELD CHECK: (Northcote and Armitage)

Outcrops in Davidson Brook were examined for 1200 m above the point where the MacLean access road crosses the brook. The rocks consist of chloritic meta-andesite close to an intrusive contact with the Davidson Brook Pluton. The meta-andesite is locally veined by epidote veinlets. Armitage went 1200 m up the brook before locating the pluton.

Mineralization:

Very sporadic disseminated pyrite occurs in chloritic meta-andesite. A zone of weak hematite in fractures in meta-andesite was also sampled.

Suites of samples were collected for analyses at Bondar Clegg Laboratory, Ottawa, by a combination of Direct Irradiation/INAA and Atomic Absorption analyses. Representative samples were retained for petrographic analyses, if required. A

brief description of the samples is given in Table 1 and the results of the analyses are given in Table 2.

TABLE 1.
DAVIDSON BROOK SAMPLES

88 DB 3801	Very minor sulphides (pyrite) in meta-andesite. In Davidson Brook, 10 m above MacLean access road.
88 DB 3802	Very minor sulphides (pyrite) in meta-andesite. In Davidson Brook, 700 m above MacLean access road (450 m above new major access road).
88 DB 3803	Very minor sulphides (pyrite) in meta-andesite. In Davidson Brook, 1000 m above MacLean access road (750 m above new major access road).
88 DB 3804	Granitic rock. In Davidson Brook, 1200 m above MacLean access road (950 m above new major access road).
88 DB 3805	Meta-andesite, hematite in hairline fractures. In Davidson Brook 300 m above MacLean access road (50 m above new major access road)

Results of Analyses:

Table 2 indicate no values of economic or metallogenic significance.

DAVIDSON BROOK H08-06
NTS 21H/08C
Figure 1

TABLE 2
DAVIDSON BROOK ANALYSES

DAVIDSON BROOK fw + 33 (ppm unless otherwise indicated)

88-08	NaX	Sc	Cr	FeX	Co	Ni																
3001	1.8	29.4	77	8.8	45	27	<100	4.2														
3002	2.52	33.8	100	9.4	58	<20	<100															
3003	1.8	31.5	100	12	68	21	<100	5.														
3004	3.42	4.2	100	1.3		<20	<100	4.8														
3005	3.82	21.2	84	5.8	13	<20	<100															

DAVIDSON BROOK ATOMIC ABSORPTION (ppm unless otherwise indicated)

88-08	Cu	Zn	Ag	Pb	W ppb
3001	32	42	<0.1	10	
3002	5	14	<0.1	<2	
3003	1	222	<0.1	38	
3004	10	114	<0.1	22	
3005	83	28	<0.1	4	

| | | |

GLASGOW BROOK

OCCURRENCE: GLASGOW BROOK H08-08 (Quartz veins)

LOCATION: 5033070 N 385880 E 21H/08C

ACCESS:

From Highway 209 at Diligent River drive 1.75 km north up Ramshead River Road past Yorke Settlement junction to Ramshead River-Glasgow Mountain junction. Drive up Glasgow Mountain Road for 2.35 km to closest point to west branch of Glasgow Brook. Walk 175 m east to the brook. Quartz veins are widespread in the northwest and northeast branches of Glasgow Brook.

REFERENCES:

Donohoe, H. V., Jr. and Wallace, P. I., 1978. Geology Map of the Cobequid Highlands; NSDME Preliminary Map 78-1.

Donohoe, H. V., Jr., 1981. Mineral Occurrences in the Cobequid Highlands; *In* Mineral Resources Division, Report of Activities 1981, ed. K. A. Mills, NSDME Report 82-1, p. 79-112.

Donohoe, H. V., Jr. and Wallace, P. I., 1982. Geological Map of the Cobequid Highlands, Colchester, Cumberland and Pictou Counties, Nova Scotia; 4 sheets plus legend, NSDME Maps 82-06, -07, -08, -09, scale 1:50 000.

GEOLOGY:

Donohoe and Wallace (1982) place the occurrence, but did not confirm it, in the northeast branch of Glasgow Brook on the Kirkhill Fault separating Jeffers Formation (H_J) from Greville River Formation (DCG). The location given on the MOD card places the occurrence in the northwest branch of Glasgow Brook, 1 km to the southwest, in Greville River Formation. Donohoe and Wallace (1982) provide a general description of the formations as follows:

Jeffers Formation (H_J): All rocks are altered by varied amounts of metamorphism. Green to grey volcanic, lithic tuff, siltstone and agglomerate; green chlorite phyllite, altered, mafic metavolcanic rocks (metabasalt?); green to grey felsic cataclasites.

Greville River Formation (DC_G): Grey, tan quartz wacke and arenite, siltstone; red, green siltstone.

RESULTS OF 1988 FIELD CHECK: (Northcote, DeMont and Armitage)

The area of the "occurrence" is in polydeformed black slate/silty slate which is abundantly sheared and shattered with weak to moderate iron-staining in planes of foliation. The metasedimentary rocks are cut across and along foliation by white quartz and carbonate(?) gash veins, < 1 cm to > 15 cm wide, containing very minor sulphides (pyrite). There are no obvious contact effects with country rock. Attitudes of the veins are varied:

187°/75° E
40°/V - 70° NW

The veins are widespread, occurring in the northwest and northeast branches of Glasgow Brook.

Five samples were taken for macropetrographic examination and sent to Bondar Clegg Laboratory, Ottawa, for a combination of Direct Irradiation/INAA and Atomic Absorption analyses. Table 1 is a brief description of the samples and Table 2 lists the analytical results.

TABLE 1
GLASGOW BROOK SAMPLES

88 GB 3101 Quartz veining (sweats) in black shale/slate. Minor disseminated pyrite.

88 GB 3102 As for 3101.

88 GB 3103 Wallrock, black shale/slate.

88 GB 3104 As for 3101 (no visible pyrite).

88 GB 3105 As for 3101.

Significance:

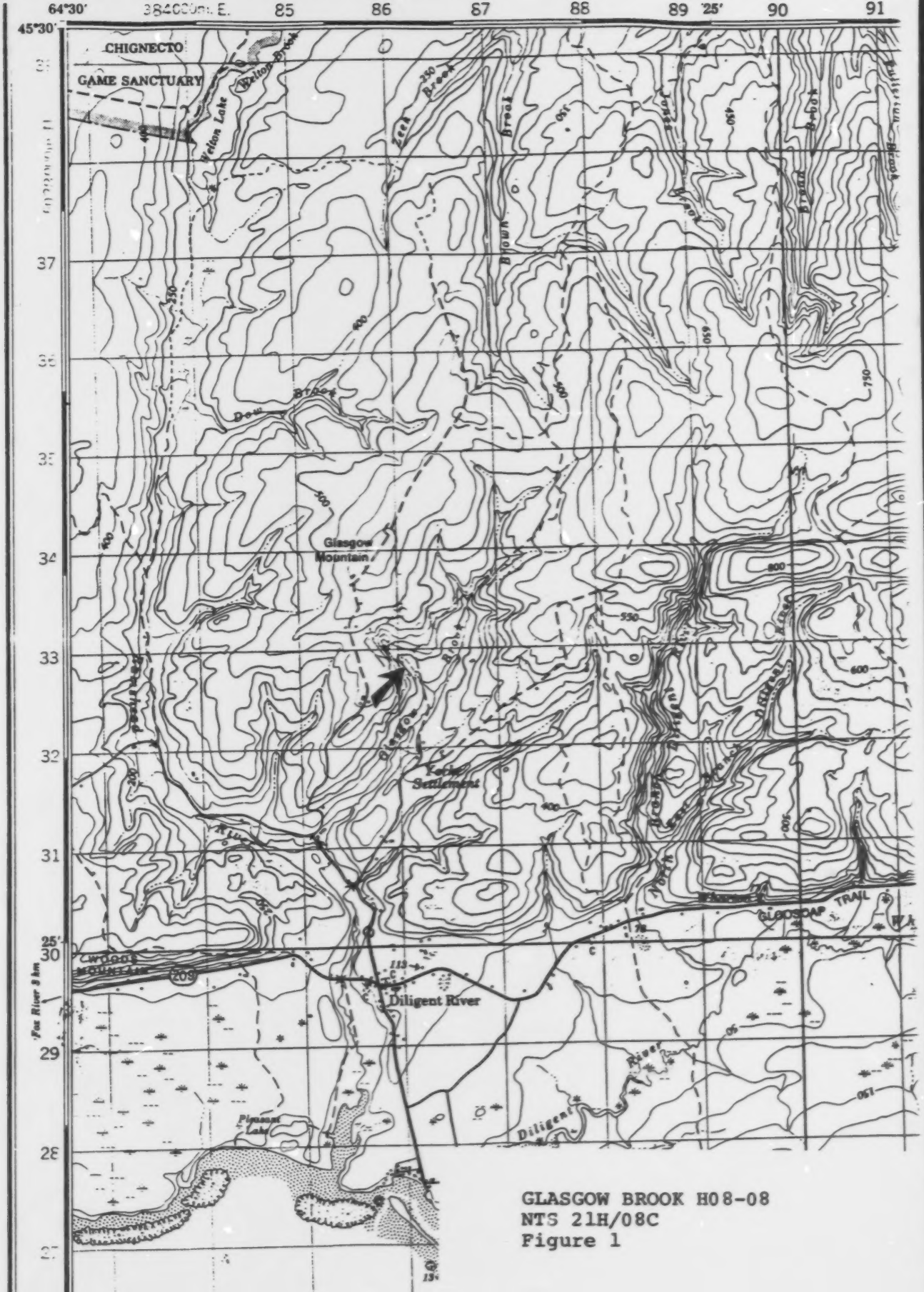
The validity of this "occurrence" is questioned.

(1) The quartz veins look like sweats resulting from metamorphism of country rocks. They do not appear to be the result of hydrothermal systems.

(2) Two locations 1 km apart are given: one unverified by Donohoe and Wallace (1982) on the northeast branch of Glasgow Brook on the Kirkhill Fault; a second location on MOD card places the "occurrence" on the northwest branch.

(3) A local farmer told a story of "misrepresentation" in connection with this "gold" property.

(4) Results of analyses of 4 suites of vein plus wallrock and one of wallrock produced no anomalous values other than iron. Gold values are all below the 2 ppb detection level.



GLASGOW BROOK H08-08
NTS 21H/08C
Figure 1

TABLE 2

GLASGOW BROOK ANALYSES

GLASGOW BROOK Au + 33 (ppm unless otherwise indicated)

88-GB	Na%	Sc	Cr	FeX	Co	Ni	Zn	Fe								
3101	0.77	7.0	220	4.5		<20	<100	3.60								
3102	0.13	5.2	200	1		<20	<100	1.80								
3103	1.2	5.5	120	3.4		<20	<100	4.2								
3104	0.15	4	340	3.4		<20	<100	3.7								
3105	0.32	5.0	200	4.2		<20	<100	4.0								

GLASGOW BROOK ATOMIC ABSORPTION (ppm unless otherwise indicated)

88-GB	Cu	Zn	Ag	Pb	Au ppb
3101	81	41	<0.1	4	
3102	25	20	<0.1	4	
3103	44	21	<0.1	7	
3104	7	72	<0.1	4	
3105	8	20	<0.1	4	

Sb	Te	Cs	Ba	La	Ce	Nd	Sm	Eu	Tb	Yb	Lu	Hf	Ta	W	Ir	Pb	Th	U
0.44	10	1.08	188	15	28	14	3.4	1	1.1	2.8	0.43	4.2	0.58	1	0.0	2	3.4	1.1
0.38	10	0.7	82	8.9	18	9	2.2	1	0.8	1.8	0.28	2.8	0.38	1	0.0	2	2.2	0.7
0.55	10	1.3	54	8	17	8	2.1	1	0.8	1.8	0.27	2.7	0.37	1	0.0	2	2.1	0.7
	10	1.1	128	18	39	17	3.9	1	1.1	3.1	0.48	4.8	0.65	1	0.0	2	3.9	1.2
	10	1.1	20	2.8	6.4	3.2	1.1	1	0.8	1.1	0.17	1.7	0.23	1	0.0	2	1.1	0.4

JEFFERS BROOK

OCCURRENCE: JEFFERS BROOK (#1) H08-15 (Weakly anomalous Zn, (Pb))
JEFFERS BROOK (#2) (Trace visible chalcopyrite)

LOCATION: (a) 5036260 N 398900 E NTS 21H/08C
(b) 5034950 N 397770 E

ACCESS:

(a) From Parrsboro drive north 5.25 km up the east side of Parrsboro River to Jeffers Brook. A bush road through the Ripley property provides access along the north side of Jeffers Brook. Follow this road for about 3.3 km to a second tributary stream flowing south. Follow this tributary south for 0.5 km to its junction with the northeast branch of Jeffers Brook. Go up the latter for 350 to 400 m to the area of a small adit in the north bank.

(b) Follow the bush access road along the north side of Jeffers Brook approximately 1.0 km to the first south-flowing brook entering Jeffers Brook. Follow this tributary 0.4 km to Jeffers Brook then go upstream to the first tributary entering from the south. The outcrop area of the reported occurrence extends from about 400 to 800 m up this tributary.

REFERENCES:

Donohoe, H. V., Jr. and Wallace, P. I., 1978. Geology Map of the Cobequid Highlands; NSDME Preliminary Map 78-1.

Donohoe, H. V., Jr., 1981. Mineral Occurrences in the Cobequid Highlands; *In* Mineral Resources Division, Report of Activities 1981, ed. K. A. Mills, NSDME Report 82-1, p. 79-112.

Donohoe, H. V., Jr. and Wallace, P. I., 1982. Geological Map of the Cobequid Highlands, Colchester, Cumberland and Pictou Counties, Nova Scotia; 4 sheets plus legend, NSDME Maps 82-06, -07, -08, -09, scale 1:50 000.

NSDME ASSESSMENT REPORT 21H/08C 27-E-25 (01, 04)

PREVIOUS WORK: (DeMont, revised MOD card)

1970 NSDME AR 21H/08C 27-E-25 (04) Merril Island Mining discovered mineralized float, in the areas of the 2 "occurrences" indicated on Figure 1, which coincide with sporadic soil geochemical anomalies at (1) and (2), and partially coincides with a northwesterly trending Radem anomaly at (1).

GEOLOGY: (Donohoe and Wallace, 1982).

Area 1:

Donohoe and Wallace (1982) indicate area (1) is underlain by Hadrynian diorite to quartz diorite (Hd) Paleozoic (Eary Devonian) orange-tan alkali feldspar granite to syenogranite (PPg) and Jeffers Formation (H_J). The Jeffers Brook Formation is comprised of deformed and metamorphosed green to grey volcanic, lithic tuff, siltstone and agglomerate; green chlorite phyllite; altered mafic volcanic rocks (metabasalt?); green to grey felsic cataclasites.

Area 2:

This area is located near the fault contact between Jeffers Brook Formation (H_J) described above and the Middle Devonian Fountain Lake Group (DC_{FLr}) which is composed of tan to orange rhyolitic lava flows and ignimbrites, red, grey sandstone, volcanic wacke, tuff and agglomerate.

RESULTS OF THE 1988 FIELD CHECK: (Northcote, DeMont and Armitage)

Area 1.
A small adit (1 m x 1 m x 2 m deep) was found on the north bank of the brook. The rocks in the area are composed of diorite and more felsic phases in chloritic, epidotized metasediments and metavolcanics. There is minor iron-staining and some disseminated pyrite occurring in diorite; a sample was taken for analyses.

Area 2.
The rocks in the second area are metasediments/metavolcanics intruded by granite/granodiorite. At 400 m there is an iron-stained zone on the west side of the stream with some hematite. The outcop area extends several hundred metres upstream. Area 2 is a contact zone with metasediments and metavolcanics, chloritic, epidotized, epidote-rich stringers following foliation. These rocks contain minor disseminated pyrite and blebs with a trace of chalcopyrite, (confirmed).

Samples from both areas were sent to Bondar Clegg, Ottawa, for a combination of Direct Irradiation/INAA and Atomic Absorption analyses. Table 1 gives a description of the samples fron areas 1 and 2, and Table 2 lists the results of the analyses.

TABLE 1
JEFFERS BROOK SAMPLES

Area 1 Sample:
88 JB 3401 Pyritic diorite; chip sample taken from stream channel in weakly pyritic zone a few metres upstream from the adit.

Area 2 Samples:
88 JB 3701 to 3704 Suites of chip samples composed of very weakly mineralized chloritic, epidotized metasediments, metavolcanics and granitic rocks taken at intervals of about 60 m over a length of about 200 m.

Results of Analyses:

Area 1.
Pyritic diorite is anomalous in Zn at 1394 ppm and Pb at 164 ppm.

Area 2.
Although traces of chalcopyrite were confirmed in a few rock chips, the analyses of suites of chip samples gave no anomalous base- or precious-metal values.

JEFFERS BROOK H08-15
NTS 21H/08C
Figure 1

TABLE 2
JEFFERS BROOK ANALYSES

JEFFERS BROOK (1) Au + 33 (ppm unless otherwise indicated)

	Na%	Sc	Cr	Fe%	Co	Ni	Zn	As	Se	Br	Rb	Zr	Mo	Ag	Cd	Sn	Sb	Ta
88-JB																		
3401	0.05	0.3	310	34.9	120	<20	1000	25	<5	2.4	12	<200	5	3	16	<100	1.1	<10

JEFFERS BROOK (1) ATOMIC ABSORPTION (ppm unless otherwise indicated)

	Cu	Zn	Ag	Pb	Au ppb
88-JB					
3401	55	1304	2.5	184	<5

JEFFERS BROOK (2) Au + 33 (ppm unless otherwise indicated)

	Na%	Sc	Cr	Fe%	Co	Ni	Zn	As	Se	Br	Rb	Zr	Mo	Ag	Cd	Sn	Sb	Ta
88-JB																		
3701	1.7	31.2	230	8.1	40	80	100	3.4	<5	<2	80	<200	1	<2	<5	<100	0.7	<10
3702	3.51	20	120	5.5	15	<20	100	4.5	<5	<2	20	<200	2	<2	<5	<100	0.6	<10
3703	1.4	20.3	170	12	35	53	120	13	<5	<2	50	<200	1	<2	<5	<100	0.6	<10
3704	2.88	13	130	4.8	15	<20	<100	3.5	<5	<2	80	<200	1	<2	<5	<100	0.6	<10

JEFFERS BROOK (2) ATOMIC ABSORPTION (ppm unless otherwise indicated)

	Cu	Zn	Ag	Pb	Au ppb
88-JB					
3701	43	107	<0.1	28	<5
3702	8	44	<0.1	9	<5
3703	88	110	<0.1	15	<5
3704	12	53	<0.1	9	<5

Sc	Sb	Ta	Ce	Ba	La	Ce	Sm	Eu	Tb	Yb	Lu	Hf	Ta	W	Ir	Au	Th	U	HT
100	1.1	<10	<0.5	<50	<2	<5	0.3	<1	<0.5	<2	<0.2	<1	<0.5	<1	<50	<2	<0.2	0.4	51.44

Sc	Sb	Ta	Ce	Ba	La	Ce	Sm	Eu	Tb	Yb	Lu	Hf	Ta	W	Ir	Au	Th	U	HT
100	0.7	<10	3.5	940	10	5	5.1	<1	1.1	3	0.3	4	0.5	<1	<50	<2	3.6	1.1	38.08
100	0.0	<10	0.0	910	30	7	0.0	<1	1.4	3	0.5	5	1	<1	<50	<2	2	0.3	37.49
100	0.0	<10	3.7	100	10	7	0.0	<1	1.1	3	0.4	5	1	<1	<50	<2	0.5	0.7	34.72
100	0.0	<10	3.5	820	30	80	0.0	<1	1.1	3	0.5	5	1	<1	<50	<2	0.5	2	35.28

FIVE ISLANDS

OCCURRENCE: FIVE ISLANDS H08-16 (Pb, Zn, Ag,(Fe, Ba, F, Cu))

LOCATION: 5032300 N 418960 E NTS 21H/08D

ACCESS:

From Highway 2 at Five Islands, drive up New Brittain Road 3.7 km. An intermittent outcrop area extends for about 50 m along the east side of the road. The excavation is conspicuous.

REFERENCES:

Donohoe, H. V., Jr. and Wallace, P. I., 1978. Geology Map of the Cobequid Highlands; NSDME Preliminary Map 78-1.

Donohoe, H. V., Jr., 1981. Mineral Occurrences in the Cobequid Highlands; *In* Mineral Resources Division, Report of Activities 1981, ed. K. A. Mills, NSDME Report 82-1, p. 79-112.

Donohoe, H. V., Jr. and Wallace, P. I., 1982. Geological Map of the Cobequid Highlands, Colchester, Cumberland and Pictou Counties, Nova Scotia; 4 sheets plus legend, NSDME Maps 82-06, -07, -08, -09, scale 1:50 000.

NSDME ASSESSMENT REPORT 21H/08D 13-D-19 (01-06) Triton, 1968-71.
21H/08D 27-D-19 (04) Cuvier Mines Ltd. 1974
21H/08D 07-D-19 (01, 04) Falconbridge. 1977

PREVIOUS WORK:

1968-71 Triton.
Geological, geochemical (soil, silt) and geophysical (magnetic, VLF, IP and gravity) surveys. Followed by diamond drilling.

A Cu-Pb-Zn soil anomaly indicated a mineralized zone which was outlined by 11 diamond-drill holes. It is a low grade deposit, 1.35% Pb-Zn and 1/3 oz/ton Ag, of dimensions 360 x 15-45 m. The deposit is still open at depth. (AR 21H/08D 13-D-19 (04)).

1974 Cuvier Mines Ltd.
Geochemistry (soil), geophysical (proton magnetometer, HLEM), prospecting, diamond-drilling, trenching (AR 21H/08D 27-D-19 (04)).

1977 Falconbridge.
Geochemistry (soil), geological compilation, geophysical (EM-16VLF, magnetometer), trenching, diamond-drilling. (AR 21H/08D 07-D-19 (01,04)).

GEOLOGY:

(DONOHOE AND WALLACE, 1982)

Donohoe and Wallace (1982) show the Five Islands occurrence to be in Silurian/Devonian (undifferentiated, SDu) rocks bounded on the south by the Cobequid Fault and on the north by Devonian/Carboniferous granite (DCg).

The Silurian/Devonian (SDu) rocks consist of red, green, tan siltstone, quartz wacke; grey to black siltstone, polymictic (granite clast) conglomerate; grey to tan calcareous siltstone. The Devonian/Carboniferous rocks (DCg) are grey, tan, pale orange hornblende, biotite, monzogranite to alkali feldspar granite.

(NSDME AR 21H/08D 13-D-19 (04), Triton)

Mineralization occurs in a faulted, fractured sequence of calcareous siltstone, sandstone, argillite and conglomerate. Two units of highly magnetic, pyrite-rich, calcareous bands (skarns) were noted. Some silicification of the host rock also occurs.

The sediments have been extensively fractured and most of the holes intersected abundant fault gouge. Mineralization is not confined to any unit but occurs primarily in 1 - 2 mm wide calcite stringers. Stringers of barite and fluorite with carbonate were also found in drill core. In some of the holes hematite was found as an accessory mineral.

(AR 21H/08D 07-D-19 (01,04), Falconbridge)

Mineralization of the sediments consists of sphalerite and galena in bands conformable to bedding as fine grained disseminations and coarser crosscutting fracture fillings, suggesting two ages of mineralization. Mineralization appears to be stratigraphically controlled being confined to sandstones and siltstones with the better grades in the sandstone.

PREVIOUS ASSAYS:

NSDME AR 07-D-19 (01)

1. Rusty grey laminated siltstone:
   40 ppm Cu, 3500 ppm Pb, 14700 ppm Zn, 13.5 ppm Ag.

2. Rubble, quartz, feldspar conglomerate:
   228 ppm Cu, 5000 ppm Pb, 27800 ppm Zn, 16.8 ppm Ag.

NSDME AR 07-D-19 (04)

Chip samples:

Trench	Pb	Zn	Ag	Width
K(North)	7035 ppm	15400 ppm	13.3 ppm	3.0 m
K(South)	1.25%	2.35%	0.39 oz/t	6.1 m
N	0.78%	2.63%	6.1 ppm	3.0 m
R+S	--	--	4.13 ppm	18.3 m

RESULTS OF 1988 FIELD CHECK: (Northcote and Armitage)

The mineralization at the roadside is in a thinly bedded sequence of argillaceous siltstone and shale.

Foliation or bedding: 009°/60° E
020°/65° E

The richest mineralization measures 4.8 m (more or less following foliation) by 1.4 m. Overall width is 2.9 m. Sulphide mineralization includes sphalerite, galena, pyrite and pyrrhotite(?).

Mineralization occurs in:

(a) open space quartz - feldspar - ? veinlets,
(b) hairline fracture fillings,
(c) pods and blebs and
(d) disseminated in bedding, not related to obvious fractures

The wall rock in the hanging wall at the south end of the main zone appears bleached and altered but bedded shale and argillaceous siltstones within the main mineralized zone are still recognizable. The bleached zone is not considered the main zone but is veined by quartz and (?) and has disseminated sulphides.

The trenches to the east of the roadside occurrence were examined but no bedrock is presently exposed.

Samples were collected for petrographic description and were sent to Bondar Clegg Laboratory, Ottawa, for a combination of Direct Irradiation/INAA, Atomic Absorption and conventional assay for a total of 36 elements. Table 1 gives a brief description of the samples and Table 2 lists the results of the analyses.

Significance:

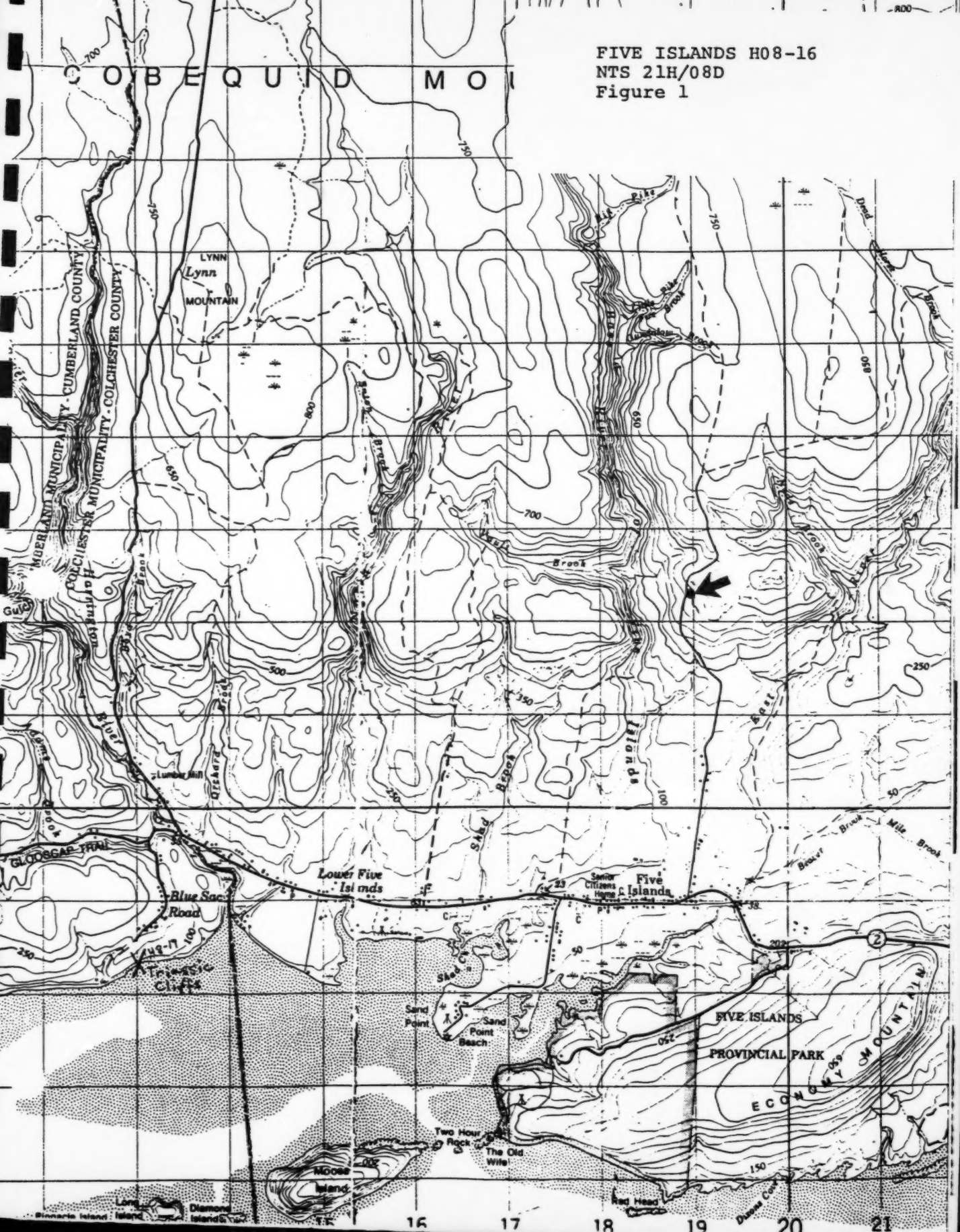
Mineralization is not associated with any particular horizon. Although the sediments contain disseminated bedded mineralization, the most significant mineralization is associated with carbonate-barite veins and breccia infillings. Minor hydrothermal alteration accompanies mineralization. The occurrence exhibits both bedded and epigenetic hydrothermal characteristics and requires petrographic lithology and ore study.

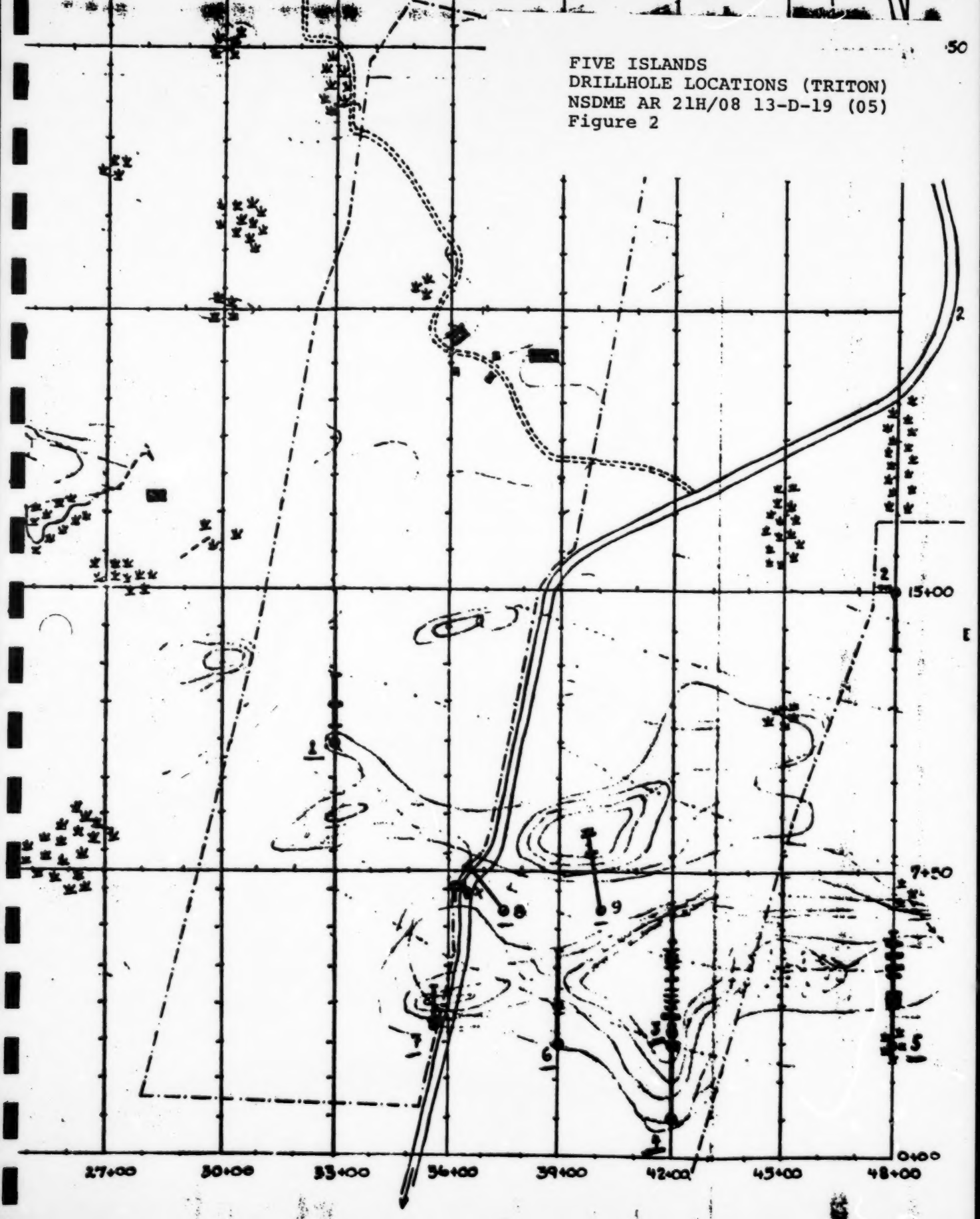
TABLE 1
FIVE ISLANDS SAMPLES[1]

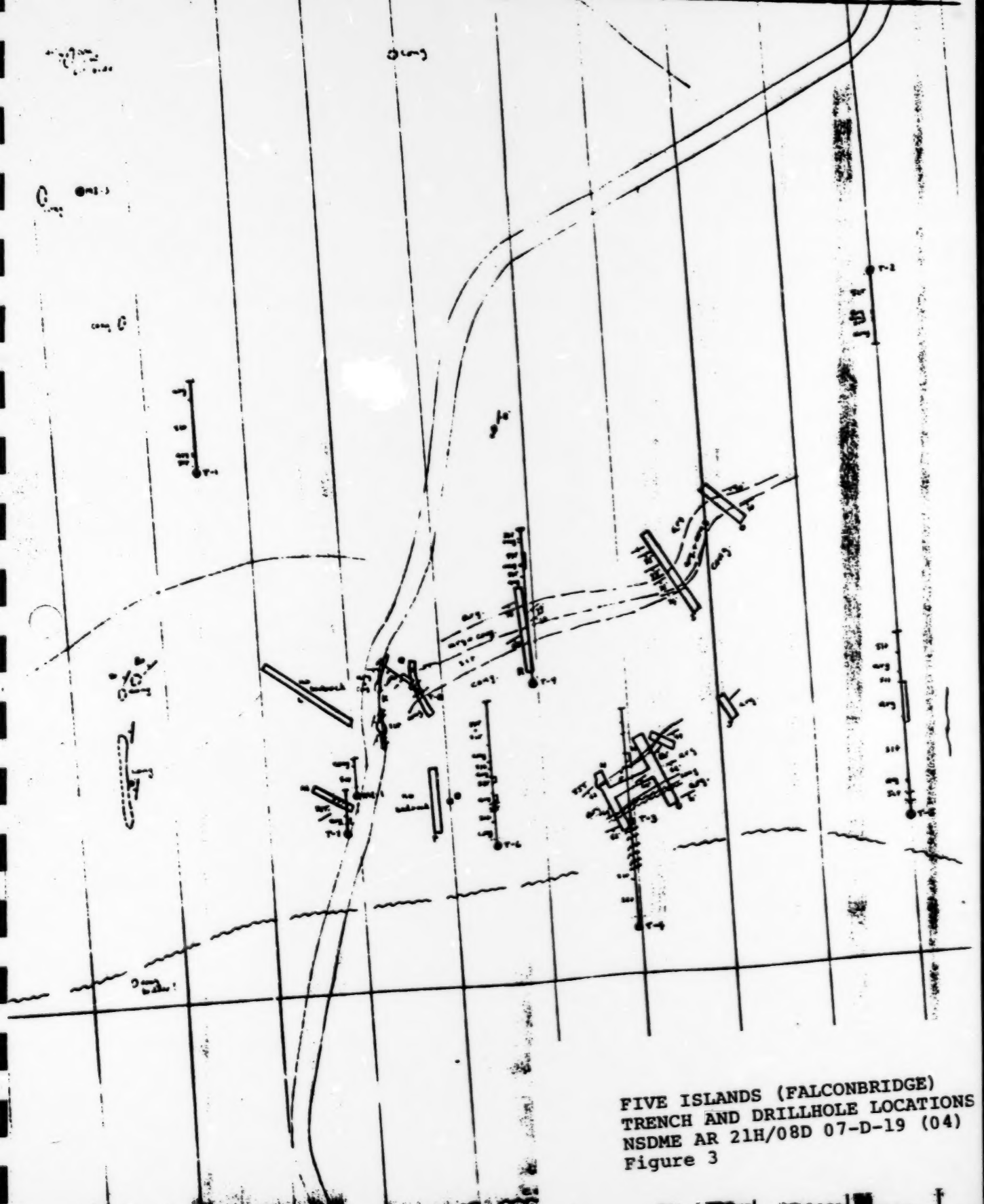
88 FI 3901	Interbedded shale, argillaceous siltstone/sandstone. Fractures filled with sphalerite and lesser galena. Possible blebs of sphalerite in rock matrix, especially sandy beds.
88 FI 3901A	Impure sandstone, cut by irregular quartz veinlets. Calcareous. Blebs of sphalerite, lesser galena, and pyrrhotite(?).
88 FI 3901B	Laminated shale/siltstone, irregular quartz - carbonate veining. Crackled with sphalerite and galena mineralization. Some diffuse layered sphalerite mineralization along bedding. Graded bedding. Mineralization in coarser sections.
88 FI 3902	Pebble conglomerate.
88 FI 3904	Laminated graded bedding siltstone/shale showing basal part of one layer consisting of granular sphalerite(?).
88 FI 3904A	Impure sandstone, crackle stockwork filled by quartz/carbonate with associated sphalerite, blebs of sphalerite in rock matrix. Two generations of veining. Open space drusyness.
88 FI 3904B	Argillaceous, shale, siltstone. Shattered, veined. Sphalerite associated with veining but also diffuse segregations along coarser bedding planes but may be associated with diffuse quartz.
88 FI 3905	Laminated argillaceous siltstone/shale. Fractures filled by irregular quartz-carbonate veins with associated sphalerite, pyrite. Sphalerite, pyrite in fractures and as diffuse networks in the coarser grained silty layers. No apparent relationship to fracturing or to quartz veinlets.
88 FI 3905A	Laminated argillaceous siltstone/shale showing sphalerite and lesser galena layering with diffuse lower boundaries in the more silty portions of beds. Note: quartz-veining enters but does not cross the bedded mineralization. Siliceous material appears to be associated with the bedded mineralization.
88 FI 3905B	Argillaceous siltstone, weakly to moderately calcareous, minor shaly lensoids, cut by irregular iron-stained quartz veinlets with associated sulphides. Blebs of diffuse sulphides throughout matrix, not all of which appear to be fracture controlled.
88 FI 3905C	Laminated argillaceous siltstone and shale, weakly to moderately calcareous, cut by quartz-carbonate veins containing blebs of sphalerite, fine granular pyrite, pyrrhotite(?). Silty layers contain networks, blebs, lensoids of aggregates of sphalerite grains with no obvious relationship to veining, fracturing or silicification.
88 FI 3906	Pale cream-buff argillite, more massive, crackle fractured, partially filled by discontinuous quartz veinlets, limonitic fractures. Weak sulphide mineralization associated with veinlets and traces of galena in rock matrix associated with incipient fractures. Shows the crackle, gash veinlet fracture patterns.

1 Samples are all from the roadside occurrence

FIVE ISLANDS H08-16
NTS 21H/08D
Figure 1




FIVE ISLANDS
DRILLHOLE LOCATIONS (TRITON)
NSDME AR 21H/08 13-D-19 (05)
Figure 2
50
2
15+00
7+50
0+00
27+00
30+00
33+00
36+00
39+00
42+00
45+00
48+00
1
2
3
5
6
7
8
9



FIVE ISLANDS (FALCONBRIDGE)
TRENCH AND DRILLHOLE LOCATIONS
NSDME AR 21H/08D 07-D-19 (04)
Figure 3

TABLE 2
FIVE ISLANDS ANALYSES

FIVE ISLANDS Au + 33 (ppm unless otherwise indicated)

| 88-FI | Mo% | Sr | Cr | Fe% | Co | Ni | Zn | | |